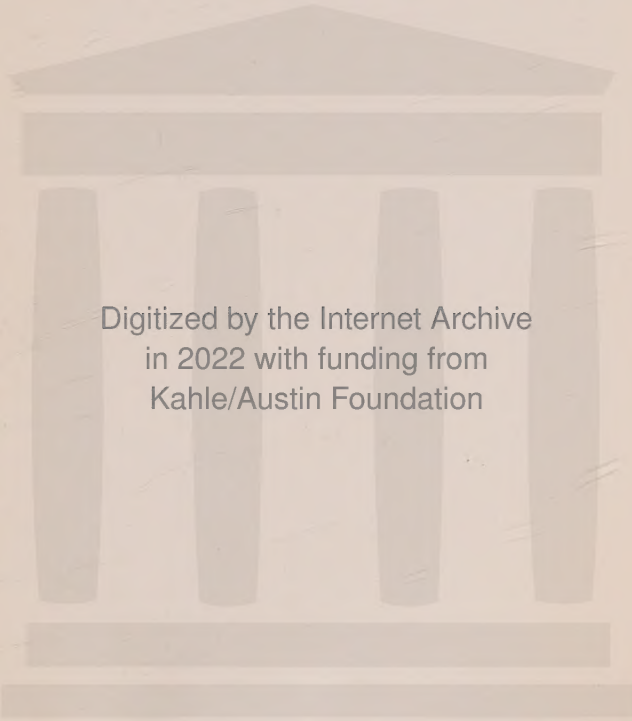
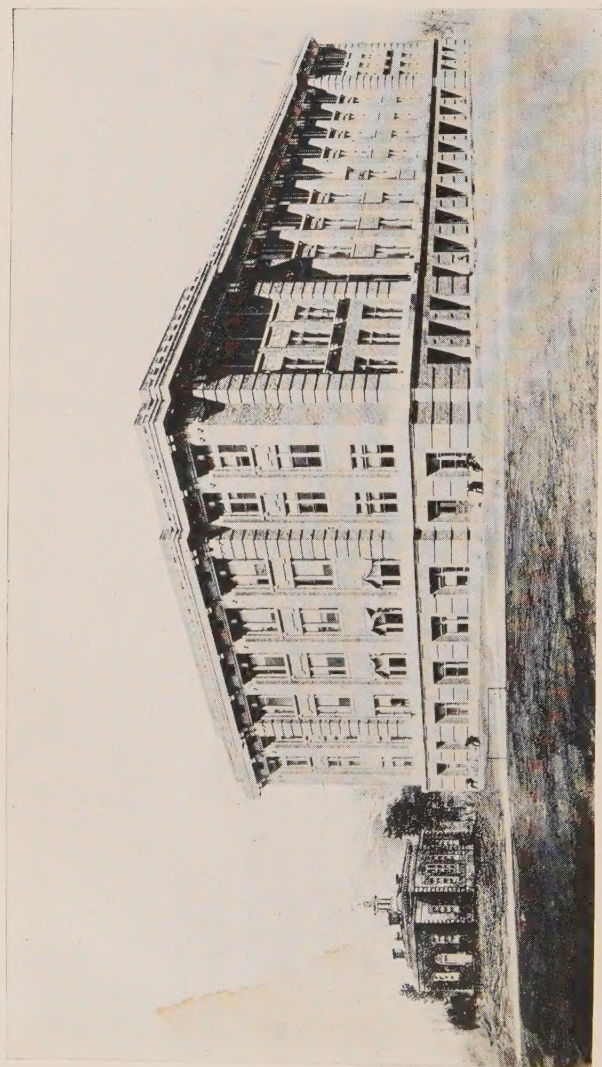


HISTORY
OF THE
CHEMICAL LABORATORY
OF THE
UNIVERSITY OF MICHIGAN

BY
EDWARD D. CAMPBELL



Digitized by the Internet Archive
in 2022 with funding from
Kahle/Austin Foundation



THE NEW LABORATORY SHOWING SOUTH AND EAST SIDES; WITH A REPRODUCTION OF THE
ORIGINAL LABORATORY UPON THE SAME SCALE

HISTORY
OF THE
CHEMICAL LABORATORY
OF THE
UNIVERSITY OF MICHIGAN
1856-1916

BY
EDWARD D. CAMPBELL
Professor of Chemistry and Director of the Chemical Laboratory
University of Michigan

ANN ARBOR
PUBLISHED BY THE UNIVERSITY
1916



PREFACE.

The author has had in mind two principal objects in compiling the present work. The first is an attempt to give a condensed account of the development of chemistry, both pure and applied, at the University of Michigan, from the time this subject was first taught at the University down to the present. The second object is to preserve a permanent list of all those men who have constituted the instructing staff in the Chemical Laboratory, together with the years of their service therein, and a list of the scientific papers and other articles which they have published during the years of their official connection with the Laboratory.

The author wishes here to acknowledge fully his obligation to Dr. W. J. Hale for the great pains he has taken in collecting the titles of the papers and supervising the publication; to Dr. M. Gomberg for valuable advice concerning the classification and arrangement of the papers; to Dr. A. B. Stevens for much of the material used in preparing the illustrations; and to other members of the faculties for the assistance they have rendered in making the bibliography as complete as possible.

EDWARD D. CAMPBELL.

ANN ARBOR, APRIL, 1916.

LIST OF ILLUSTRATIONS FOR HISTORY OF THE CHEMICAL LABORATORY.

- FRONTISPIECE. The new Laboratory showing South and East sides; with a reproduction of the original Laboratory upon the same scale.
- PLATE I. The original Laboratory as built in 1856, showing the North and West sides.
- PLATE II. The Laboratory after the addition built in 1866, showing West and North sides.
- PLATE III. The Laboratory after the addition made in 1874, showing West and North sides.
- PLATE IV. The Laboratory after the addition made in 1880, showing West and North sides.
- PLATE V. The Laboratory after the addition made in 1888, showing West and North sides.
- PLATE VI. The old Laboratory as it appeared in 1907, showing West and South sides.
- PLATE VII. The new Laboratory built in 1909, showing West and North sides.

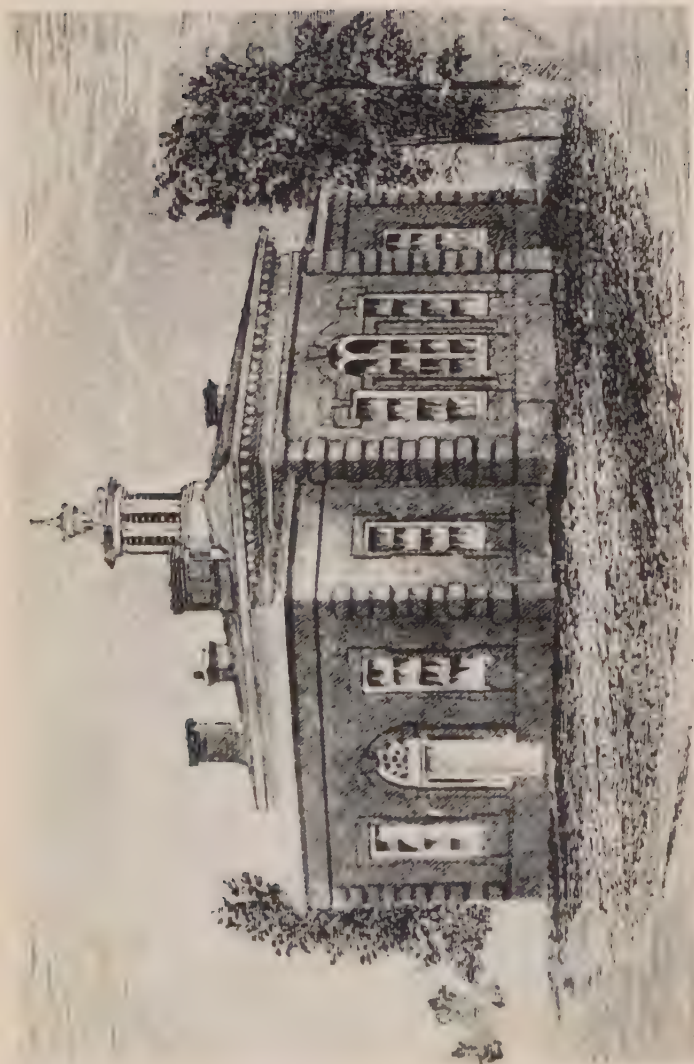
AN HISTORICAL OUTLINE OF THE DEVELOPMENT OF CHEMISTRY, PHARMACY AND CHEMICAL ENGINEERING, IN THE UNIVERSITY OF MICHIGAN.

Chemistry was the first of the experimental sciences to be taught by the laboratory method, and the development of the science at the University of Michigan has followed along lines similar to those which have been followed by many of the European as well as American Universities, although the lines of development at Michigan have been influenced by local conditions and the individuality of the men constituting the teaching staff.

Although Douglas Houghton was appointed Professor of Chemistry, Mineralogy, and Geology at the University of Michigan in 1839, chemistry was not taught at this University until 1844 when Silas H. Douglas was first appointed as assistant to the Professor of Chemistry. Instruction in chemistry dates from the year of Dr. Douglas' first appointment. At this time Liebig's Laboratory at Giessen, known as the first, had been established for sixteen years, and in 1842 Professor Silliman at Yale had begun to give laboratory instruction in chemistry. About this time also the private laboratory of Dr. Robert Hare in Philadelphia was a resort of special instruction in chemistry. When chemistry began to be taught in the University of Michigan the career of Berzelius was but just closing in Sweden. A. W. Hofmann was about going to London, by the efforts of the Prince Consort, to open a laboratory there. So little confidence had young Hofmann in his English venture that he only consented to go if the position of privat docent could be held open to him in Germany should he

wish to return. In 1851 Professor Josiah P. Cooke at Harvard began giving laboratory instruction, but Boylston Hall, long used in part as a chemical laboratory, was not completed until 1857.

When Henry P. Tappan came to this University to accept the Presidency in 1852 he brought with him a thorough appreciation of the value of the laboratory method of instruction in sciences. Laboratory courses in chemistry were organized in the University not long after Dr. Tappan's inauguration, and Dr. Douglas' persistent efforts to secure the construction of a chemical laboratory gained better foothold by the success of his little class which was carried on in the Medical Building and by the support of the new President. December 18, 1855, the report of President Tappan to the Board of Regents contained these words: "In respect to buildings the true principle is to build as little as possible. . . . It will be necessary, however, to erect a chemical laboratory for the analytical course. . . . Such a building will cost from two to three thousand dollars." A Detroit architect was employed, and on the eighth of May, 1856, the Regents voted that "Whereas a convenient building for the experiments and instruction in analytical chemistry is required, therefore, an appropriation of \$2,500 is hereby made for the erection of a building in conformity to the plans and specification of A. J. Jordan, architect," and Professor S. H. Douglas was made superintendent of construction. The several appropriations made for the building before it was occupied foot up to \$4,509.85. and July 1, 1856, the finance committee estimated that "the building and apparatus for erection and finishing would cost \$6,000." In October the President in his annual report set forth that the Laboratory "will unquestionably be unsurpassed by anything of the kind in our country."



1. THE ORIGINAL LAP-SA-PO-AH BUTE IN 1856; SHOWING THE NORTH AND WEST SIDES



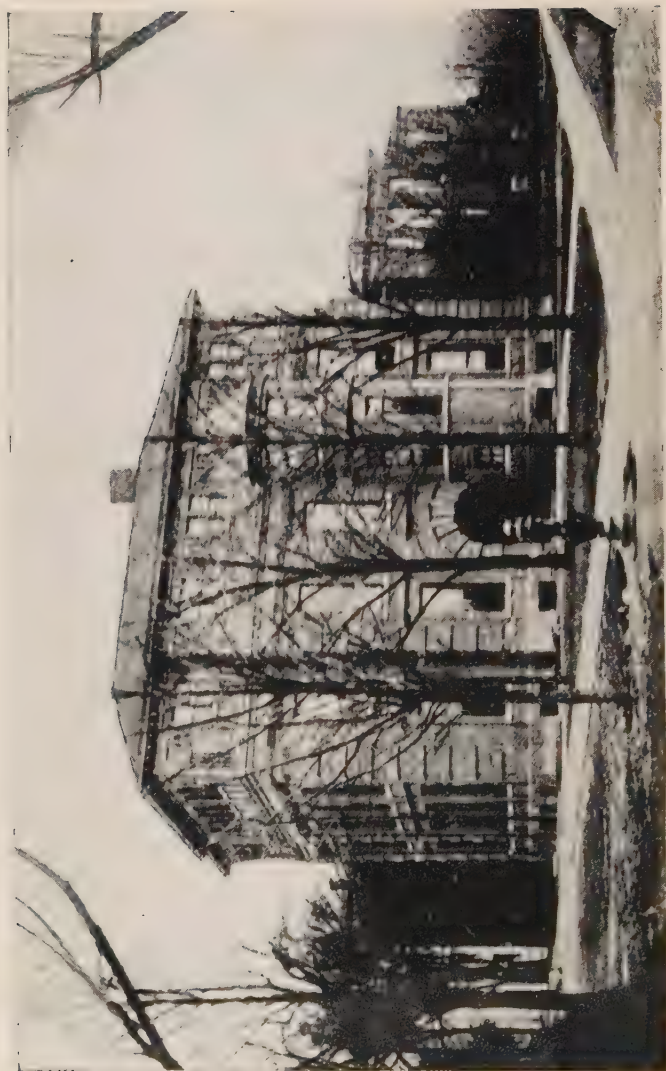
II. THE LABORATORY AFTER THE ADDITION MADE IN 1866; SHOWING WEST AND NORTH SIDES



III. THE LABORATORY AFTER THE ADDITION MADE IN 1874; SHOWING WEST AND NORTH SIDES



IV. THE LABORATORY AFTER THE ADDITION MADE IN 1886; SHOWING WEST AND NORTH SIDES



V. THE LABORATORY AFTER THE ADDITION MADE IN 1888: SHOWING WEST AND NORTH SIDES

Thus was completed the first chemical laboratory of a state university. In a one story building containing three rooms and equipped with twenty-six laboratory tables was carried on all the laboratory work in chemistry of the entire University. Academic as well as professional students received all of their laboratory training in chemistry in this one laboratory. This principle of having all the work in chemistry of whatever nature for the entire university centralized in one building was followed for a period of nearly fifty years, or until 1903, when the overcrowded condition of the Laboratory necessitated the removal of the laboratory work in physiological chemistry to the newly constructed Medical Building.

The growth of the work in chemistry due to an appreciation of the opportunity to carry on laboratory work as well as to the natural growth of the University, is shown by the rapid succession of additions to the Laboratory which this development necessitated. Enlargements to the building were made in the years 1861, 1866, 1868, 1874, 1880, 1888, and 1901. The number of laboratory tables increased from twenty-six, in the original building, to one hundred ninety in 1875, and to a total in 1901, after the last addition to the building, of 362, exclusive of a very limited number required for special work and those required for the use of the teaching staff. It was after the last addition to the old building that the continued growth of the work in other lines of chemistry necessitated the removal of the laboratory work in physiological chemistry in 1903.

Although the large amphitheatre in the Dental and that in the Medical Building were used for a number of years for lectures in chemistry and although the laboratory work in physiological chemistry was taken out of the old Chemical Laboratory, the continued growth of the work in other lines of chemistry soon showed that the construction of an entirely new building was an impera-

tive necessity. In the fall of 1907 architects were employed to draw up plans and specifications for a building which should meet the needs of the University for a number of years to come. Plans for a four story building, 270 feet in length by 150 feet in width, and having provision for about 950 laboratory tables in addition to a liberal provision for special rooms and members of the teaching staff, were approved the following spring by the Board of Regents and submitted to contractors for bids on the cost of construction. The estimates on the first set of plans were so high that it became necessary to reduce the size of the building and a new set of plans providing for a four story building 230 feet in length by 130 feet in width were approved, and contracts for its construction were authorized on September 24, 1908. These contracts, which did not include installation of equipment or apparatus, amounted to \$245,918.65. The total expenditure on the building with equipment has been to date about \$305,000. The present Chemistry and Pharmacy Building, which retains the essential features of design and arrangement of the original plans, is provided with 634 laboratory tables, in addition to an ample number of well equipped rooms for special work and for the use of members of the teaching staff.

During the college year 1908-1909, the last year in which all the chemical work was carried on in the old Laboratory, there were enrolled in the class work in chemistry, pharmacy and chemical engineering 2,599 students. Of these 20.8 per cent were registered in the College of Literature, Science and the Arts; 37.1 per cent in the College of Engineering; 12.6 per cent in the Medical School; 16.6 per cent in the College of Pharmacy; 1.9 per cent in the Homœopathic Medical School; 10.0 per cent in the College of Dental Surgery; and 1.0 per cent in the Graduate School. During this same year there were enrolled in the laboratory courses 1,271 students.

an average of 3.5 for each of the laboratory tables in the building. Of the students taking laboratory work 33.1 per cent were registered in the College of Literature, Science, and the Arts, 30.6 per cent in the College of Engineering, 6.5 per cent in the Medical School, 18.0 per cent in the College of Pharmacy, 1.3 per cent in the Homœopathic Medical School, 8.3 per cent in the College of Dental Surgery, and 2.2 per cent in the Graduate School.

Of the 3,497 students enrolled in class work in chemistry, pharmacy, and chemical engineering during the college year 1915-1916, 28.3 per cent were registered in the College of Literature, Science, and the Arts, 41.6 per cent in the College of Engineering, 0.3 per cent in the Medical School, 14.7 per cent in the College of Pharmacy, 0.2 per cent in the Homœopathic Medical School, 10.9 per cent in the College of Dental Surgery, and 4.0 per cent in the Graduate School. During this same year enrollment in laboratory courses showed 2,253 or an average of 3.6 for each of the 634 laboratory tables in the building. Of the students taking laboratory work 35.2 per cent were registered in the College of Literature, Science, and the Arts, 36.9 per cent in the College of Engineering, 0.4 per cent in the Medical School, 11.4 per cent in the College of Pharmacy, 0.2 per cent in the Homœopathic Medical School, 11.0 per cent in the College of Dental Surgery, and 4.9 per cent in the Graduate School.

The practical absence of students registered in the Medical Schools in the enrollments of 1915-1916 is due to the fact that between the time of these enrollments the entrance requirements for the Medical Schools were raised so as to include at least two years of college work before registration in them, during which time students are required to complete all the work in chemistry formerly taken after registration in the Medical Schools.

It is within the Chemical Laboratory that the College of Pharmacy was developed. Although courses in pharmacy were given in conjunction with courses in analytical chemistry as early as 1860, a regular curriculum was not drawn up until 1868. The degree of Pharmaceutical Chemist was first conferred in 1869, but the College was not organized as an independent department until 1876-1877. In addition to his position as Professor of Organic Chemistry, Dr. Albert B. Prescott was appointed Dean of the College of Pharmacy in 1876, which position he filled for over twenty-eight years. During Dr. Prescott's administration—and in no small part due to his efforts—the standards of pharmacy were very much raised, not only in Michigan but throughout the entire country. Dr. Prescott's keen appreciation and encouragement of research in other branches of chemistry than pharmacy went far toward the establishment of a spirit of research throughout the Laboratory. The design of the department, as stated at the time of its organization, was to "qualify its graduates to become practical pharmacists, general analysts, and commercial manufacturers, and to give the training of systematic work in exact science." The first requirement for admission was that of "a good knowledge of the English language as determined by a written examination," but the full preparation of the ordinary high school was soon made requisite. The degree was obtained by successful students at the expiration of two years. It was not long until graduate work and a Master's degree were announced, and in 1896-1897 the degree of Bachelor of Science in Pharmacy was added. The course for this degree was one of four years, its entrance requirements and first year's work being uniform with those for the academic degrees in science. In 1913 the curriculum leading to the degree of Pharmaceutical Chemist was lengthened so as to require three years for its completion.

the degree of Graduate in Pharmacy being given to those who had satisfactorily completed the former two year curriculum.

Before the establishment of the Michigan Agricultural College at Lansing some lectures on agricultural chemistry were given at the University; but as those responsible for the development of chemistry here felt that the field of agricultural chemistry properly belongs to the State Agricultural College, no efforts have been made to develop this subject at the University.

Among the first laboratory courses given in 1854, when the laboratory work was carried on in the Medical Building, was one in toxicological analysis. Work of this kind continued to be given, the material analyzed being such as would be of value to students of the Medical School. This work in physiological chemistry was largely developed in the Chemical Laboratory up to 1903, the instruction, however, being given mostly by members of the Medical Faculty so that this branch of chemistry has been more associated with the development of the Medical School than with that of the Chemical Laboratory. In 1888 the work in hygiene was transferred to the building constructed for the Laboratories of Hygiene and Physics, and fifteen years later, on the completion of the new Medical Building, the laboratory work in physiological chemistry was taken out of the Chemical Laboratory.

In the early years of the teaching of chemistry in the University the work was given entirely by lectures covering the principles of chemistry and its applications, and when laboratory work was introduced this consisted very largely of analytical methods and their applications. In 1846, Heinrich Will, at that time an assistant to Liebig, published an outline of chemical analysis in which he embodied the ideas on this subject as taught in Liebig's Laboratory. A few years after its translation into Eng-

lish, Will's "Outline of Chemical Analysis" was adopted in this Laboratory. In 1864 Dr. Douglas compiled a set of analytical tables which went through three editions, the last being published in 1868. These tables were then used in conjunction with Fresenius' "Manual of Qualitative Analysis" for several years. In 1874 the first edition of Douglas' and Prescott's "Qualitative Chemical Analysis" appeared, and thereafter served as the text book for teaching this subject. This text was revised in 1876 and again in 1880. In 1892 the work was rewritten and enlarged, appearing under the joint authorship of Prescott and Johnson. The fifth edition of this book further revised and enlarged appeared in 1901, and a sixth revised edition was published in 1908. This edition is still considered one of the best empirical manuals of qualitative analysis in the English language. Almost from the beginning of laboratory work in this University the value of a thorough course in qualitative analysis as a disciplinary training in the power of close observation and deduction has been appreciated by those in charge of the work, and this is perhaps the reason why more time has been devoted to this subject than is usually required. The disciplinary value of qualitative analysis was appreciated by no one more than by Professor Otis C. Johnson, who for more than thirty years was in charge of this subject.

In 1880 the Laboratory of General Chemistry was established. With this was developed, between 1895 and 1900, a laboratory of physical chemistry, with a force of instruction and an equipment demanded by the rapid growth of this branch of science. General and physical chemistry were provided for in the Chemical Building, with a separate organization, a provision not unlike that of the "Second Chemical Laboratory" of some German Universities. In 1904, however, on the resignation of the director of the laboratories of general

and physical chemistry these laboratories were united with the laboratories of organic, analytical and applied chemistry under a single administrative head; the College of Pharmacy, however, retaining an independent organization.

A distinct increase of activity in scientific research, particularly in the line of organic chemistry, was noticeable in the early nineties and the research spirit stimulated at this time has continued in its development down to the present. This stimulation of the spirit of research was due in large measure to the work of Dr. P. C. Freer, between the years of 1889 and 1904, in which year he resigned the Directorship of the Laboratory of General Chemistry.

With the rapid development of metallurgical industries, particularly that of iron and steel in the early seventies, there arose a demand for chemists who were trained in the analyses of metallurgical materials, and the University responded by developing courses in this work and carrying on research along this line. In 1885 there was organized in the College of Literature, Science, and the Arts, a curriculum leading to the degree of Bachelor of Science in Chemistry, which degree was conferred for the first time in 1886. In 1895 the College of Literature, Science, and the Arts decided to abolish all specified requirements for graduation and special degrees. As a result of this action the degree of Bachelor of Science in Chemistry was conferred for the last time in 1899. In 1898 a curriculum substantially that which had been required for the degree of B.S. in Chemistry, but with the addition of some work in engineering, was offered in the College of Engineering, the degree of B.S. in Chemical Engineering being conferred on completion of this work. This curriculum with some minor modifications is that still followed by students in the College of Engineering who wish to prepare themselves to enter

industries in which the services of the trained chemist can be of value.

In 1914 a curriculum providing for a thorough training in chemistry, but involving the substitution of some cultural studies and electives in other sciences for much of the engineering work, was again offered in the College of Literature, Science, and the Arts; the degree of B.S. in Chemistry to be conferred for satisfactory completion of the work.

On account of the peculiarly intimate relation existing between chemistry and the work of all the Colleges and Schools comprising the University, except that of the Law School, the Director of the Chemical Laboratory has always been responsible directly to the Board of Regents for the teaching of chemistry for the entire University and for the needs of the Chemical Laboratory.

In 1870 Dr. Silas H. Douglas was appointed first Director of the Chemical Laboratory, his full title being "Professor of Chemistry and Director of the Chemical Laboratory," which latter position he held until 1877, at which time his title was "Professor of Metallurgy and Chemical Technology and Director of the Chemical Laboratory." Although in 1880 the Laboratory of General Chemistry was separately organized from those of Analytical, Organic and Applied Chemistry, neither of the responsible heads of the Laboratories had the title of Director until 1884 when the title of Dr. A. B. Prescott was made "Director of the Chemical Laboratory and Professor of Organic and Applied Chemistry and Pharmacy." The following year this was changed to "Director of the Chemical Laboratory, Professor of Organic and Applied Chemistry and Pharmacy, and Dean of the School of Pharmacy." At the end of his administration in 1905 Dr. Prescott's title was "Director of the Chemical Laboratory, Professor of Organic Chemistry and Dean of the School of Pharmacy. In

1891 Dr. P. C. Freer, previously Professor of General Chemistry, was appointed Professor of General Chemistry and Director of the Laboratory of General Chemistry, which title he held until his resignation in 1904.

In 1905 the separation of the administrative control of the College of Pharmacy from that of the Department of Chemistry was indicated by the appointment of an independent dean for the College of Pharmacy; the title of the successor to Dr. Prescott was then made "Director of the Chemical Laboratory and Professor of Chemical Engineering and Analytical Chemistry." In 1914, upon his resignation of the Professorship of Chemical Engineering, the title of the Director was changed to "Professor of Chemistry and Director of the Chemical Laboratory."

Since the opening of the original Chemical Laboratory in this University there have appeared 746 articles published by members of the teaching staff during the years when they were connected with the Chemical Laboratory. Of these, 401 are original contributions to the science of chemistry, while 345 are other publications dealing with pure chemistry, pharmacy or chemical engineering. Of the original contributions about three-fourths have appeared during the last twenty-five years.

MEMBERS OF FACULTIES WHOSE WORK WAS CARRIED ON IN THE CHEMICAL LABORATORY OF THE UNIVERSITY OF MICHIGAN

WITH

YEAR OF APPOINTMENT TO RANK OF INSTRUCTOR OR ABOVE;
YEAR OF TERMINATION OF SERVICE IF TERMINATED;
AND TITLE HELD AT TERMINATION OF SERVICE
OR AT THE PRESENT TIME.

<i>Appointment Number</i>		<i>Year of Appoint- ment</i>	<i>Year of Termi- nation</i>
1	SILAS HAMILTON DOUGLAS, M.A., M.D., Professor of Metallurgy and Chemical Technology and Director of the Chemical Laboratory.	1844	1877
2	ALFRED DuBOIS, M.A., Assistant Professor of Chemistry.	1857	1867
3	ALBERT BENJAMIN PRESCOTT, M.D., LL.D., Director of the Chemical Laboratory, Professor of Organic Chemistry, and Dean of the School of Pharmacy.	1865	1905
4	PRESTON BENJAMIN ROSE, M.A., M.D., Assistant in Chemistry.	1866	1875
5	OTIS COE JOHNSON, PH.C., A.M., Professor Emeritus of Chemistry.	1875	1912
6	JOHN WILLIAMS LANGLEY, S.B., M.D., Professor of General Chemistry and Metallurgy.	1875	1889
7	SAMUEL TOWNSEND DOUGLAS II, PH.B., PH.C., Assistant in Quantitative Analysis.	1875	1878
8	VICTOR CLARENCE VAUGHAN, PH.D., M.D., Professor of Hygiene and Physiological Chemistry, Director of the Hygienic Laboratory, and Dean of the Department of Medicine and Surgery.	1876	1903

<i>Appointment Number</i>		<i>Year of Appoint- ment</i>	<i>Year of Termi- nation</i>
9	BYRON WILLIAM CHEEVER, A.M., M.D., Acting Professor of Metallurgy.	1878	1888
10	DOUGLAS ARAD JOY, E.M., M.D., Assistant in General Chemistry.	1879	1881
11	THEODORE JOHN WRAMPELMEIER, Ph.C., A.B., Assistant Professor of Organic Chemistry and Pharmacy.	1881	1886
12	ALVISO BURDETT STEVENS, Ph.C., Ph.D., Professor of Pharmacy and Secretary of the College of Pharmacy.	1886	
13	FREDERICK GEORGE NOVY, Sc.D., M.D., Professor of Bacteriology.	1887	1903
14	DAVID HENRY BROWNE, Ph.B., Instructor in Quantitative Analysis.	1888	1889
15	PAUL CASPAR FREER, Ph.D., M.D., Professor of General Chemistry and Director of the Laboratory of General Chemistry.	1889	1904
16	CHARLES KING MCGEE, A.B., Instructor in General Chemistry.	1889	1891
17	GEORGE WALTON WHYTE, B.S., Instructor in Metallurgy and Assaying.	1889	1890
18	FRANK CLEMES SMITH, B.S., Instructor in Quantitative Analysis.	1889	1890
19	EDWARD DEMILLE CAMPBELL, B.S., (CHEM.) Professor of Chemistry and Director of the Chemical Laboratory.	1890	
20	GEORGE OSWIN HIGLEY, M.S., Ph.D., Instructor in General Chemistry.	1891	1905
21	DAVID MARTIN LICHTY, Ph.D., Associate Professor of General Chemistry.	1891	
22	JULIUS OTTO SCHLOTTERBECK, Ph.C., Ph.D., Professor of Pharmacognosy and Botany, and Dean of the College of Pharmacy.	1892	
23	MOSES GOMBERG, Sc.D., Professor of Organic Chemistry.	1893	
24	WILLIAM FRANKLIN EDWARDS, B.S., Instructor in Organic Chemistry and Ac- countant in the Chemical Laboratory.	1893	1895

<i>Appointment Number</i>		<i>Year of Appoint- ment</i>	<i>Year of Termini- nation</i>
25	PERRY FOX TROWBRIDGE, PH.B., Instructor in Organic Chemistry and Ac- countant in the Chemical Laboratory.	1895	1901
26	PENOYER LEVI SHERMAN, PH.D., Instructor in General Chemistry.	1896	1899
27	DAVID LAKE DAVOL, PH.C., Instructor in Organic Chemistry.	1896	1897
28	ARTHUR LACHMAN, PH.D., Instructor in General Chemistry.	1896	1897
29	ALFRED HOLMES WHITE, A.B., B.S., Professor of Chemical Engineering.	1897	
30	SAMUEL LAWRENCE BIGELOW, PH.D., Professor of General and Physical Chem- istry.	1898	
31	ARCHIBALD CAMPBELL, PH.M., Instructor in Organic Chemistry and Ac- countant in the Chemical Laboratory.	1898	1899
32	GEORGE AUGUSTUS HULETT, PH.D. Assistant Professor in Physical Chemistry.	1899	1905
33	EUGENE CORNELIUS SULLIVAN, PH.D., Instructor in Analytical Chemistry.	1899	1903
34	FREDERICK LEVY DUNLAP, Sc.D., Assistant Professor of Analytical Chemistry.	1900	1907
35	ALPHONSO MORTON CLOVER, PH.D., Instructor in General Chemistry.	1901	1904
36	WILLIAM GABB SMEATON, A.B., Assistant Professor of General Chemistry.	1902	
37	WALTER HENRY BLOME, B.S., Acting Instructor in Pharmacy.	1903	1905
38	WILLIAM JAY HALE, PH.D., Associate Professor of General Chemistry.	1904	
29	RUBEN WILFRED BALCOM, PH.D., Instructor in Analytical Chemistry.	1905	1907
40	SAMUEL COLVILLE LIND, PH.D., Assistant Professor of General and Physical Chemistry.	1905	1915
41	HOBART HURD WILLARD, PH.D., Assistant Professor of Analytical Chemistry	1905	
42	KARL WILHELMI ZIMMERSCHIED, M.S., Instructor in Chemical Engineering.	1905	1911
43	LEE HOLT CONE, PH.D., Associate Professor of Organic Chemistry.	1906	

<i>Appointment Number</i>		<i>Year of Appoint- ment</i>	<i>Year of Termi- nation</i>
44	ROBERT JOHN CARNEY, A.B. Instructor in Analytical Chemistry.	1907	
45	HARRY NEWTON COLE, A.B., B.S., Instructor in Analytical Chemistry.	1907	
46	FERN L. SHANNON, Ph.D., B.S. (PHAR.), Instructor in Pharmacy.	1909	1911
47	ELMER EDWIN WARE, B.S. (CH.E.), Professor of Chemical Engineering.	1909	
48	FLOYD EARL BARTELL, Ph.D., Instructor in General and Physical Chemistry.	1910	
49	RICHARD CHACE TOLMAN, Ph.D., Instructor in Physical Chemistry.	1910	1911
50	BERTRAND GRUNWALD, (DIP.L.ENG.), Instructor in Chemical Engineering.	1911	1912
51	JAMES ELMER HARRIS, Ph.D., Instructor in General and Physical Chem- istry.	1911	
52	WINFIELD SCOTT HUBBARD, Ph.D., Instructor in Pharmacy and Acting Secretary of the School of Pharmacy.	1911	1914
53	ROY KENNETH McALPINE, A.B., Instructor in Analytical Chemistry.	1911	
54	ALBERT EASTON WHITE, A.B., Assistant Professor of Chemical Engineering.	1911	
55	WALTER LUCIUS BADGER, A.B., M.S., Assistant Professor of Chemical Engineering.	1912	
56	JOSEPH STANLEY LAIRD, Ph.D., Instructor in Chemical Engineering.	1912	
57	JOHN DAVISON RUE, A.M., Assistant Professor of Chemical Engineering.	1913	
58	LOUIS THEODORE ANDEREGG, A.M., Acting Instructor in General Chemistry.	1913	1915
59	CLIFFORD CONKLIN GLOVER, Ph.C., M.S., Instructor in Pharmacy.	1914	
60	ALFRED LYNN FERGUSON, Ph.D., Instructor in General and Physical Chemistry.	1915	
61	CLIFFORD CYRILL MELOCHE, Ph.D., Instructor in Analytical Chemistry.	1915	

BIBLIOGRAPHY.

A double-column system has been introduced in the classification of the bibliographies of the members of the several departments. The names are given alphabetically.

Publications which present new data or new interpretations of earlier data are looked upon as original in their scope, and are grouped together on the left hand side of each page under the heading "Original Contributions." Publications which present merely analytical records and make no claims to originality in the methods of obtaining these records, even though the manner of presentation is new, are grouped together on the right hand side of each page under the heading "Other Publications."

In this latter category we may look for text books, addresses before scientific societies, popular articles and scientific discussions of various problems. Book-reviews properly fall under this head and accordingly may be found here as complete as it is possible to make them. In short the right hand column may be interpreted as showing the various activities of the members of the several departments outside of their researches proper. Each edition of a book must necessarily be given a separate entry, excepting wherein it is known to have received no further elaboration on the part of the author or authors; in such cases dates of re-printing are given under the titles at the last revision. Publications that lie entirely outside the realms of scientific work are not included; these, however, are but few.

In many cases, especially in earlier years, the same article is found to appear in several journals. Often-

times an article has been re-written and given another title. These articles of the same general context appear here under a single title (the first in point of date) and a number of citations to other journals in which they occur, either in the original or translated tongue, are merely added below. In this manner every publication cannot be numbered but only those which deal with new subjects or further elaborations of older subjects. As a matter of fact the right hand column contains so much oftentimes of minor or possibly local significance that it becomes difficult to classify by context. The result is that all or nearly all articles in this column are given each an individual entry, but without numbering. In the left hand column, however, the subject matter is clearly recognizable and articles of the same general context, unless they present further data, are classified together and given a single entry, as previously stated. These entries are numbered and stand correctly as an index of the original contributions to science. The two columns are presented in parallel chronological order.

Further, in order to avoid counting the same publication twice, when perchance it is the work of two members of the staff, it is given a number only under the work of its first-named author. If the first-named author is not of the staff at this University it naturally must be numbered under the work of the second-named author. Mention of a first-named author is made under the caption "In collaboration with" and placed in parentheses just before an entry for a second-named author; the names of second- or third-named authors collaborating with a first-named author are given of course in the entries for the latter, but only under the caption "with" and placed in parentheses directly after the title of article.

In order that the bibliography of each of the present members of the several departments may be made as



VI. THE OLD LABORATORY AS IT APPEARED IN 1907; SHOWING WEST AND SOUTH SIDES



VII. THE NEW LABORATORY BUILT IN 1909; SHOWING WEST AND NORTH SIDES

complete as possible, the work of each member, previous to his appointment at the University of Michigan, is given in italics at the beginning of his bibliography.

This bibliography includes all titles up to January 1, 1916. The abbreviations adopted for the publications of the American Chemical Society are followed wherever possible.

Walter L. Badger

1912—

ORIGINAL
CONTRIBUTIONS

Contribution from the University of Minnesota.

(In collaboration with F. C. Frary.)

The Preparation of Calcium.

Trans. Am. Electro. Chem. Soc. 16, 185-195 (1909).

Contribution from the Bureau of Standards, Washington, D. C.

(In collaboration with W. F. Hillebrand.)

Errors in the Determination of Moisture in Coal.

Trans. Eighth International Congress Applied Chem. 10, 187-194 (Sept. 1912).

OTHER
PUBLICATIONS

Floyd E. Bartell

1910—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

(In collaboration with S.
Lawrence Bigelow.)

*The Size of the Pores in
Porcelain, and Osmotic Effects.*
See S. L. Bigelow No. 6
(1909).

1. THE PERMEABILITY OF PORCE-
LAIN AND COPPER FERROCYAN-
IDE MEMBRANES.
J. Physic. Chem. 15, 659-674
(Oct. 1911).
2. PORE DIAMETERS OF OSMOTIC
MEMBRANES.
J. Physic. Chem. 16, 318-
335 (Apr. 1912).
Numbers 1 and 2: Doctor's
Dissertation, University of
Michigan 1910.
3. NEGATIVE OSMOSE.
J. Am. Chem. Soc. 36, 646-
656 (Apr. 1914).

S. Lawrence Bigelow
1898—

ORIGINAL
CONTRIBUTIONS

Katalytische Wirkungen auf die Geschwindigkeit der Oxydation des Natriumsulfits durch den Sauerstoff der Luft.

Inaugural Dissertation. University of Leipsic.

Z. physik. Chem. 26, 493-532 (July, 1898).

1. A SIMPLIFICATION OF BECKMANN'S BOILING-POINT APPARATUS.

Am. Chem. J. 22, 280-287 (Oct. 1899).

2. ON THE PASSAGE OF A DIRECT CURRENT THROUGH AN ELECTROLYTIC CELL.

J. Physic. Chem. 6, 603-628 (Dec. 1902).

3. THE INFLUENCE OF DISSOLVED GASES ON CONDUCTIVITY FOR A DIRECT CURRENT.

J. Physic. Chem. 7, 327-347 (May 1903).

OTHER
PUBLICATIONS

(Review of) DIE ERHALTUNG DER ARBEIT, by Richard Heger.

Hanover: 1896.

J. Physic. Chem. 3, 108-109 (Feb. 1899).

(Review of) PHYSICAL CHEMISTRY FOR BEGINNERS, by Ch. van Deventer.

Trans. by B. B. Boltwood. New York: John Wiley & Sons 1899.

J. Physic. Chem. 3, 338 (May 1899).

(Remarks in the Discussion of) THE ELECTROLYSIS OF WATER.

Trans. Am. Electrochem. Soc. 3, 122-123 (1903).

THE GROWTH AND FUNCTION OF THE MODERN LABORATORY. (Address at Dedication of Palmer Hall Colorado College, Feb. 22, 1904).

Science n. s. 19, 641-650 (Apr. 1904).

S. Lawrence Bigelow

1898—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

(Review of) LABORATORY EXERCISES IN PHYSICAL CHEMISTRY, by Frederick H. Getman. New York: John Wiley & Sons, 1904.

J. Am. Chem. Soc. 26, 1180-1181 (Sept. 1904).

A SYNOPSIS OF A COURSE OF LECTURES IN GENERAL CHEMISTRY PUT IN THE FORM OF QUESTIONS. Ann Arbor: George Wahr (Jan. 1905). pp. 45.

A SYNOPSIS OF A COURSE OF LECTURES IN GENERAL CHEMISTRY PUT IN THE FORM OF QUESTIONS. Second Edition, Ann Arbor: George Wahr. (Dec. 1905). pp. 104.

ARE THE ELEMENTS TRANS-MUTABLE, THE ATOMS DIVISIBLE AND FORMS OF MATTER BUT MODES OF MOTION? Pop. Sci. Monthly 69, 38-51 (July 1906).

Also in Proc. Mich. Schoolmasters' Club, 1906, p. 81-94.

(Review of) GENERAL INORGANIC CHEMISTRY, by Alexander Smith. New York: The Century Co., 1906. J. Am. Chem. Soc. 28, 1081-1084 (Aug. 1906).

(Review of) ZUR ERKENNTNIS DER KOLLOIDE, by Richard Zeigmondy.

Science, n. s. 24, 372-374 (Sept. 1906).

S. Lawrence Bigelow

1898—

ORIGINAL
CONTRIBUTIONS

4. COLLODION MEMBRANES.
(With Adelaide Gemberling.)
J. Am. Chem. Soc. 29, 1576-1589 (Nov. 1907).

5. PERMEABILITIES OF COLLODION, GOLD BEATER'S SKIN, PARCHMENT PAPER AND PORCELAIN MEMBRANES.
J. Am. Chem. Soc. 29, 1675-1692 (Dec. 1907).

6. THE SIZE OF THE PORES IN PORCELAIN, AND OSMOTIC EFFECTS. (With F. E. Bartell.)
J. Am. Chem. Soc. 31, 1194-1199 (Nov. 1909).

OTHER
PUBLICATIONS

DENATURED ALCOHOL.
Pop. Sci. Monthly 70, 243-264 (Mar. 1907).

(Review of) DENATURED OR INDUSTRIAL ALCOHOL, by Rufus F. Herrick.

Science n. s. 27, 20-22 (Jan. 1908).

(Review of) NEUE CAPILLAR — UND CAPILLARANALYTISCHE UNTERSUCHUNGEN, by Friedrich Goppelsroeder. Basel: Emil Birkhauser, 1907.

J. Am. Chem. Soc. 30, 1048-1049 (Jan. 1908).

(Review of) AN ELEMENTARY STUDY OF CHEMISTRY, by Wm. McPherson and Wm. E. Henderson. Boston: Ginn & Co., 1907.

J. Am. Chem. Soc. 30, 474-476 (Mar. 1908).

(Review of) INORGANIC CHEMISTRY, by E. I. Lewis. Cambridge, England: University Press, and New York: G. P. Putnam's Sons.

J. Am. Chem. Soc. 30, 1794-1795 (Nov. 1908).

CHEMICAL ENERGY, AFFINITY AND VALENCE.

J. Mich. Schoolmasters' Club 44, 79-86 (1909).

S. Lawrence Bigelow

1898—

ORIGINAL
CONTRIBUTIONS

7. THE FUNCTION OF THE
WALLS IN CAPILLARY
PHENOMENA. (With F. W.
Hunter.)
J. Physic. Chem. 15, 367-380
(Apr. 1911).

OTHER
PUBLICATIONS

(Review of) A COURSE IN
INORGANIC CHEMISTRY FOR COL-
LEGES, by Lyman C. Newell.
Boston: D. C. Heath & Co.,
1909.
J. Physic. Chem. 14, 910-911
(Dec. 1910).

THEORETICAL AND PHYSICAL
CHEMISTRY. New York: The
Century Co., 1912. pp. xiii +
544.

(Review of) ELEMENTARY
CHEMICAL THEORY, by J. M.
Wadmore. New York: D.
van Nostrand Co., 1912.
J. Am. Chem. Soc. 36, 202-
203 (Jan. 1914).

Walter H. Blome

1903—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

1. A PRELIMINARY REPORT ON
THE ASSAY OF SANGUINARIA.
Proc. Am. Pharm. Assoc.
51, 284-286 (1903).

(In collaboration with J. O.
Schlotterbeck.)

A CONTRIBUTION TO THE
CHEMISTRY OF BOCCONIA
CORDATA.

See J. O. Schlotterbeck No.
20 (1905).

2. AN EXAMINATION OF COM-
MERCIAL DIASTASE.
Pharm. Record 24, 260-266
(Sept. 1906).

(Review of) PHARMACOLOGY
OF THE FLUID EXTRACTS IN
COMMON USE, by John S.
Wright.

Indianapolis: Eli Lilly & Co.,
1905.

J. Am. Chem. Soc. 27, 1208
(Sept. 1905).

David H. Browne

1888—1889

ORIGINAL
CONTRIBUTIONS

- I. THE DISTRIBUTION OF PHOSPHORUS IN THE LUDINGTON MINE, IRON MOUNTAIN, MICHIGAN: A STUDY OF ISOCHEMIC LINES.
Trans. Am. Inst. Mining Eng. 17, 616-632 (1889).
Engineering and Mining Journal 49, 446-450 (Apr. 1890).

OTHER
PUBLICATIONS

(Remarks on the Discussion of) A RAPID METHOD FOR THE DETERMINATION OF PHOSPHORUS IN CERTAIN ORES.
Trans. Am. Inst. Mining Eng. 17, 752-753 (1889).

Archibald Campbell

1898—1899

ORIGINAL
CONTRIBUTIONS

(In collaboration with M. Gomberg.)

HYDRAZO- AND AZO-DERIVATIVES OF TRIPHENYLMETHANE.
J. Am. Chem. Soc. 20, 780-789 (Oct. 1898).

See M. Gomberg No. 9, 1898.

OTHER
PUBLICATIONS

E. D. Campbell

1890—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

Colorimetric Process for Estimating Phosphorus in Iron and Steel.

Trans. Am. Inst. Mining Eng., 14, 382-385 (1886).

Volumetric Estimation of Phosphorus in Iron and Steel.

J. Analytical Chem. 1, 370-373 (Oct. 1887).

The Elimination of Arsenic in Phosphorus Determinations.

J. Analytical Chem. 2, 370 (Oct. 1888).

1. NOTES ON THE INTERFERENCE OF ARSENIC IN THE DETERMINATION OF PHOSPHORUS IN IRON ORES.

J. Analytical and Applied Chem. 7, 2-3 (Jan. 1893).

2. NOTES ON THE HIGHER OXIDES OF NICKEL. (With P. F. Trowbridge).

J. Analytical and Applied Chem. 7, 301-307 (June 1893).

3. (Remarks in the Discussion of) THE PHYSICS OF STEEL.

Trans. Am. Inst. Mining Eng. 23, 620-625 (1893).

4. DETERMINATION OF NICKEL IN NICKEL STEEL.

J. Am. Chem. Soc. 16, 96-102 (Feb. 1894).

E. D. Campbell

1890—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

5. DETERMINATION OF NICKEL
IN NICKEL STEEL. (With
W. H. Andrews.)
J. Am. Chem. Soc. 17, 125-
129 (Feb. 1895).
 6. SEPARATION OF NICKEL AND
IRON. (With W. H. An-
drews.)
Am. Chem. J. 17, 164-167
(Mar. 1895).
 7. ON THE OXIDATION OF
SOME GASES WITH PALLAD-
IZED COPPER OXIDE.
Am. Chem. J. 17, 681-692
(Nov. 1895).
 8. A PROPOSED SCHEDULE OF
ALLOWABLE DIFFERENCE
AND OF PROBABLE LIMITS OF
ACCURACY IN QUANTITA-
TIVE ANALYSES OF METAL-
LURGICAL MATERIALS.
J. Am. Chem. Soc. 18, 35-
37 (Jan. 1896).
 9. ON THE QUANTITATIVE DE-
TERMINATION OF HYDROGEN
BY MEANS OF PALLADOUS
CHLORIDE. (With E. B.
Hart.)
Am. Chem. J. 18, 294-298
(Apr. 1896).
 10. ON THE DIFFUSION OF SUL-
PHIDES THROUGH STEEL.
(First Paper.)
Am. Chem. J. 18, 707-719
(Nov. 1896).
- QUALITY OF CALCIUM SUL-
PHITE DISPENSED BY PHARMA-
CISTS. (With H. H. Waters.)
Proc. Mich. State Pharm.
Assoc. 13, 115-116 (1895).

E. D. Campbell

1890—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

11. ON THE INFLUENCE OF HEAT TREATMENT AND CARBON UPON THE SOLUBILITY OF PHOSPHORUS IN STEELS. (With S. C. Babcock.)
Am. Chem. J. 18, 719-723 (Nov. 1896).
12. A PURE CARBIDE OF IRON.
Am. Chem. J. 18, 836-847 (Dec. 1896).
13. REMARKS IN THE DISCUSSION OF SAUVEUR'S PAPER ON THE MICROSTRUCTURE OF STEEL AND THEORIES OF HARDENING.
Trans. Am. Inst. Mining Eng. 27, 869-876 (1897).
14. A PRELIMINARY THERMOCHEMICAL STUDY OF IRON AND STEEL. (With Firman Thompson.)
J. Am. Chem. Soc. 19, 754-766 (Sept. 1897).
Note: A CORRECTION TO Paper 14).
J. Am. Chem. Soc. 20, 78-79 (Jan. 1898).
Note: (A Withdrawal of certain data in Paper 14).
J. Am. Chem. Soc. 22, 205-206 (Apr. 1900).
15. FURTHER STUDY ON THE INFLUENCE OF HEAT TREATMENT AND CARBON UPON THE SOLUBILITY OF PHOSPHORUS IN STEEL. (With S. C. Babcock.)
J. Am. Chem. Soc. 19, 786-790 (Oct. 1897).

E. D. Campbell

1890—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

16. ON THE DIFFUSION OF SULPHIDES THROUGH STEEL.
(Second Paper.)
J. Iron Steel Inst. 52, 80-94 (1897).
17. ELECTROLYTIC DETERMINATION OF TIN IN TIN ORES.
(With E. C. Champion.)
J. Am. Chem. Soc. 20, 687-690 (Sept. 1898).
18. ON THE INFLUENCE OF SILICON UPON THE HEAT OF SOLUTION OF COKE CAST IRONS. (With Wm. E. Hartman.)
J. Am. Chem. Soc. 20, 690-695 (Sept. 1898).
19. ON THE DIFFUSION OF SULPHIDES THROUGH STEEL.
(Third Paper.)
J. Iron Steel Inst. 54, 256-260 (1898).
20. (In collaboration with William H. Hess.)
A NEW METHOD FOR THE DIRECT DETERMINATION OF ALUMINA IN PRESENCE OF IRON, MANGANESE, CALCIUM, AND MAGNESIUM.
J. Am. Chem. Soc. 21, 776-780 (Sept. 1899).
21. THE CONSTITUTION OF STEEL.
J. Iron Steel Inst. 56, 223-233 (1899).

E. D. Campbell

1890—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

22. ON THE PREPARATION OF POTASSIUM XANTHATE FOR NICKEL DETERMINATIONS.
J. Am. Chem. Soc. 22, 307-308 (May 1900).
23. THE HEAT OF FORMATION OF CARBIDES AND SILICIDES OF IRON.
J. Iron Steel Inst. 59, 211-228 (1901).
24. A ROTARY CEMENT KILN FOR USE IN THE LABORATORY.
J. Am. Chem. Soc. 24, 248-253 (Mar. 1902).
25. PROBABLE EXISTENCE OF A NEW CARBIDE OF IRON, Fe_2C . (With M. B. KENNEDY.)
J. Iron Steel Inst. 62, 288-298 (1902).
26. SOME PRELIMINARY EXPERIMENTS UPON THE CLINKERING OF PORTLAND CEMENT.
J. Am. Chem. Soc. 24, 969-992 (Oct. 1902).
27. SOME FURTHER EXPERIMENTS ON THE DIFFUSION OF SULPHIDE THROUGH STEEL. (Fourth Paper.)
J. Iron and Steel Inst. 64, 338-350 (1903).
28. AN EXPERIMENT UPON THE INFLUENCE OF THE FINE-NESS OF GRINDING UPON THE CLINKERING OF PORTLAND CEMENT. (With S. Ball.)
J. Am. Chem. Soc. 25, 1103-1112 (Nov. 1903).

E. D. Campbell

1890—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

29. FURTHER EXPERIMENTS ON THE CLINKERING OF PORTLAND CEMENT AND ON THE TEMPERATURE OF FORMATION OF SOME OF THE CONSTITUENTS.

J. Am. Chem. Soc. 26, 1143-1158 (Sept. 1904).

(In collaboration with Alfred H. White.

IMPROVEMENTS IN GAS ANALYSIS APPARATUS.

See Alfred H. White. No. 12, (1905).

SOME RESULTS OF RESEARCH WORK ON PORTLAND CEMENT AT THE UNIVERSITY OF MICHIGAN.

Michigan Technic 18, 14-21 (1905).

30. NOTE ON THE OCCURRENCE OF COPPER, COBALT AND NICKEL IN AMERICAN PIG IRONS.

J. Iron Steel Inst. 68, 371-375 (1905).

31. THE APPLICATION OF DRY AIR BLAST TO THE MANUFACTURE OF IRON.

Trans. Am. Inst. Mining Eng. 36, 765-791 (1906).

Appears in part in J. Iron Steel Inst. 67, 288-294 (1905).

32. SOME CONDITIONS INFLUENCING CONSTANCY OF VOLUME IN PORTLAND CEMENTS. (With Alfred H. White.)

J. Am. Chem. Soc. 28, 1273-1303 (Oct. 1906).

PERSÖNAL TRIBUTE TO PROF. A. B. PRESCOTT. Memorial Volume to Dr. Prescott, Ann Arbor: Privately printed 1906, p. 64-65.

E. D. Campbell

1890—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

33. A CONVENIENT AIR BATH
AND HOT PLATE.
J. Am. Chem. Soc. 29, 283-
286 (Mar. 1907).
34. DETERMINATION OF NICKEL
AND CHROMIUM IN STEEL.
(With W. Arthur.)
J. Am. Chem. Soc. 30, 1116-
1120 (July 1908).
35. A NEW METHOD FOR THE
DETERMINATION OF VANAD-
IUM IN IRON AND STEEL.
(With E. L. Woodhams.)
J. Am. Chem. Soc. 30,
1233-1236 (Aug. 1908).
36. THE CONSTITUTION OF CAR-
BON STEELS.
J. Iron Steel Inst. 78, 318-
335 (1908).
37. ON THE VOLUMETRIC ESTI-
MATION OF URANIUM AND
VANADIUM.
J. Ind. Eng. Chem. 1, 661-
665 (Sept. 1909).
38. ON THE INFLUENCE OF THE
TEMPERATURE OF BURNING
ON THE RATE OF HYDRATION
OF MAGNESIUM OXIDE.
J. Ind. Eng. Chem. 1, 665-
668 (Sept. 1909).
39. NOTE ON A RAPID COOLING
ELECTRICALLY HEATED COM-
BUSTION TUBE. (With E.
N. Gott.)
J. Ind. Eng. Chem. 1, 739-
741 (Oct. 1909).

E. D. Campbell

1890—

ORIGINAL
CONTRIBUTIONS

40. A MODIFIED COLORIMETER
AND SOME TESTS OF ITS AC-
CURAC. (With William B.
Hurley.)

J. Am. Chem. Soc. 33,
1112-1115 (July 1911).

41. ON THE DECOMPOSITION OF
METHYLENE IODIDE AND ITS
BEARING ON THE CONSTITU-
TION OF STEEL. (With
Henry S. Rawdon.)

J. Am. Chem. Soc. 34,
1159-1168 (Sept. 1912).

42. CONSTITUTION OF PORTLAND
CEMENT CLINKER.

J. Ind. Eng. Chem. 5, 627-
630 (Aug. 1913).

Tonind. Zt. 37, 1907-1910
(Dec. 1913).

43. CONVENIENT DEVICE FOR
ANALYTICAL IGNITIONS.

J. Ind. Eng. Chem. 5, 675-
677 (Aug. 1913).

44. THE EFFECT OF HEAT
TREATMENT ON THE COLOR-
IMETRIC TEST FOR CARBON
IN A 0.32 CARBON STEEL.
(With Frank D. Haskins.)

J. Iron Steel Inst. 88, 367-
382 (1913).

(In collaboration with R.
J. Carney.)

A NEW METHOD FOR THE
DETERMINATION OF THOR-
IUM IN MONAZITE SAND.

See R. J. Carney No. 2
1914.

OTHER
PUBLICATIONS

(Note) THE DISTRIBUTION OF
HYDROGEN SULPHIDE IN A
LARGE LABORATORY AND THE
USE OF ALUMINIUM STOPCOCKS.

J. Am. Chem. Soc. 33, 947-
948 (June 1911).

(Remarks in the Discussion
of) SIR ROBERT HADFIELD'S
PAPER ON A NEW METHOD OF
REVEALING SEGREGATION IN
STEEL INGOTS.

J. Iron Steel Inst. 86, 62-63
(1912).

(Remarks in the Discussion
of) M'CANCE'S PAPER ON A
CONTRIBUTION TO THE THEORY
OF HARDENING.

J. Iron Steel Inst. 89, 253-
254 (1914).

E. D. Campbell
1890—ORIGINAL
CONTRIBUTIONS

45. SYNTHETIC CELITE AND
LARGE CRYSTALS OF TRICAL-
CIC SILICATE.
J. Ind. Eng. Chem. 6, 706-
710 (Sept. 1914).
Tonind. Zt. 38, 1891-1892
(Continued), (Dec. 1914).
Appears also in CONCRETE-
CEMENT AGE, 1915, Vol. 6,
Cement Mill Section, p. 4.

46. A CONTRIBUTION TO THE
THEORY OF HARDENING AND
THE CONSTITUTION OF
STEEL.
J. Iron Steel Inst. 90, 1-16
(1914).

47. CAN THE DISSOCIATION
THEORY BE APPLIED TO
SOLID SOLUTIONS IN STEEL?
J. Am. Chem. Soc. 37,
2039-2046 (Sept. 1915).

48. ON THE FUNCTION OF FER-
RIC OXIDE IN THE FORMA-
TION OF PORTLAND CEMENT
CLINKER.
J. Ind. Eng. Chem. 7, 835-
837 (Oct. 1915).
Tonind. Zt. 1915, No. 119
and 120.

49. THE FORMATION OF SOME
BASIC SILICATES.
Trans. Am. Ceram. Soc. 17,
66-80 (Dec. 1915).

50. THE INFLUENCE OF HEAT
TREATMENT ON THE SPECI-
FIC RESISTANCE AND CHEM-
ICAL CONSTITUTION OF CAR-
BON STEELS.
J. Iron Steel Inst. 92, 164-
180 (1915).

OTHER
PUBLICATIONS

(Remarks in the Discussion
of) DE NOLLY AND VEYRET'S
PAPER ON THE TRANSFORMA-
TIONS OF STEELS.

J. Iron Steel Inst. 90, 180
(1914).

(Contribution to) SYMPOS-
IUM ON TRANSFORMATIONS OF
PURE IRON.

Trans. Faraday Society of
London (Oct. 1915).

Robert J. Carney

1907—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

(In collaboration with O. C. Johnson.)

ANALYTICAL EQUATIONS.
Fifth Edition. Ann Arbor:
Privately printed, by Eschen-
bach & Co., Easton, Pa., 1909.
pp. 40.

1. TWO NEW AND VERY DELI-
CATE TESTS BY USE OF THE
REAGENT, "TETRAMETHYL
BASE."
J. Am. Chem. Soc. 34, 32-35
(Jan. 1912).
2. A NEW METHOD FOR THE
DETERMINATION OF THORIUM
IN MONAZITE SAND. (With
E. D. Campbell.)
J. Am. Chem. Soc. 36, 1134-
1143 (June 1914).

Byron W. Cheever

1881—1888

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

1. THE ESTIMATION OF PHOSPHORUS IN IRON AND STEEL.
Trans. Am. Inst. Mining Eng. 13, 163-165 (1884).
Note also in Am. Inst. Mining Eng. 13, 656 (1885).
2. THE SEGREGATION OF IMPURITIES IN BESSEMER STEEL INGOTS ON COOLING.
Trans. Am. Inst. Mining Eng. 13, 167-171 (1884).
3. ESTIMATION OF MANGANESE, CARBON, AND PHOSPHORUS IN IRON AND STEEL.
Trans. Am. Inst. Mining Eng. 14, 372-379 (1885).
4. COLORIMETRIC ESTIMATION OF MANGANESE IN STEEL.
Trans. Am. Inst. Mining Eng. 15, 102-104 (1886).
5. TWO CONDITIONS OF PHOSPHORUS IN IRON (I).
Trans. Am. Inst. Mining Eng. 15, 448-452 (1886).
6. TWO CONDITIONS OF PHOSPHORUS IN IRON (II).
Trans. Am. Inst. Mining Eng. 16, 269-272 (1887).
7. CONVERSION OF MANGANESE TO PERMANGANIC ACIDS.
J. Analytical Chem. 1, 176-178 (Apr. 1887).
8. THE ESTIMATION OF PHOSPHORIC ACID VOLUMETRICALLY. (With E. R. Beal.)
Proc. Mich. State Pharm. Assoc. 5, 91-92 (1887).
Pharm. Era 1, 398-399 (Nov. 1887).
Pharm. Record 7, 381 (1887).

SELECT METHODS IN QUANTITATIVE ANALYSIS. Laboratory Notes. Ann Arbor: 1885. Part I, pp. 41, and Part II, pp. 46.

Alphonso M. Clover

1901—1904

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

(In collaboration with Paul C. Freer.)

ON THE CONSTITUENTS OF
JAMAICA DOGWOOD.

See Paul C. Freer No. 23,
1901.

1. DIE DARSTELLUNG DER HALOGENSUBSTITUIRTEN BUTTERSAEUREN UND DER δ -HALOGENSUBSTITUIRTEN VALERIANSAEUREN.
Ann. 319, 357-368 (1901).
2. THE HYDROLYSIS OF ORGANIC PEROXIDES AND PERACIDS.
(With G. F. Richmond.)
Am. Chem. J. 29, 179-203
(Mar. 1903).
3. THE EXISTENCE OF HYDROGEN TETROXIDE.
Am. Chem. J. 29, 463-474
(May 1903).
4. THE ACTION OF HYDROGEN PEROXIDE UPON ANHYDRIDES AND THE FORMATION OF ORGANIC ACID PEROXIDES AND PERACIDS. (With A. C. Houghton.)
Am. Chem. J. 32, 43-68
(Jan. 1904).
5. THE ADDITION OF IODINE AND POTASSIUM IODIDE TO ORGANIC COMPOUNDS CONTAINING THE CARBONYL GROUP.
Am. Chem. J. 31, 256-268
(Mar. 1904).

Harry N. Cole

1907—

ORIGINAL
CONTRIBUTIONS

OTHER
PUBLICATIONS

NOTE ON DILUTING SOLUTIONS.

The Chemist-Analyst No. 14,
4-6 (July 1915).

Lee H. Cone

1906—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

(In collaboration with M.
Gomberg.)

Ueber Triphenylmethyl. (IX
Mittheilung.)

See M. Gomberg No. 28
(1904).

(In collaboration with M.
Gomberg.)

Ueber Triphenylmethyl. (X
Mittheilung.)

See M. Gomberg No. 29
(1904).

(In collaboration with M.
Gomberg.)

Ueber Triphenylmethyl. (XI
Mittheilung.)

See M. Gomberg No. 31
(1905).

(In collaboration with M.
Gomberg.)

Ueber Triphenylmethyl. (XII
Mittheilung.)

See M. Gomberg No. 32
(1905).

Portions of these four articles appeared subsequently under the title "A Contribution to the Knowledge of Triphenylmethyl," and constituted a Doctor's Dissertation. University of Michigan (1905).

(In collaboration with M.
Gomberg.)

Ueber Triphenylmethyl.
(XIII Mittheilung.)

See M. Gomberg No. 33
(1906).

Lee H. Cone

1906—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

1. MONOHALOGEN DERIVATIVES
OF TRIPHENYL CARBINOL
CHLORIDE. (With C. C.
Long.)

J. Am. Chem. Soc. 28, 518-
524 (Apr. 1906).

(In collaboration with M.
Gomberg.)

UEBER TRIPHENYLMETHYL.
(XIV Mittheilung.)

See M. Gomberg No. 34
(1906).

(In collaboration with M.
Gomberg.)

UEBER TRIPHENYLMETHYL.
(XV Mittheilung.)

See M. Gomberg No. 35
(1906.)

2. UEBER CHLORIERUNGEN MIT
HUELFE VON PHOSPHORPEN-
TACHLORID. (With C. S.
Robinson.)

Ber. 40, 2160-2166 (May
1907).

3. (During Leave of Absence.)
Contribution from the Uni-
versity of Berlin.

(In collaboration with Emil
Fischer.)

SYNTHESE VON POLYPEPTIDEN
XXVII. I. DERIVATE DES
HISTIDINS.

Ann. 363, 107-117 (Oct.
1908).

(In collaboration with M.
Gomberg.)

UEBER TRIPHENYLMETHYL.
(XVIII Mittheilung.)

Zur Kenntniss der Chino-
carboniumsalze.

Lee H. Cone

1906—

ORIGINAL
CONTRIBUTIONS

(Experimental work in small part by O. B. Winter.)
See M. Gomberg No. 38 (1909).

Berichtigung to XVIII Mittheilung above.
Ann. 371, 388-380 (1910).

(In collaboration with M. Gomberg.)

UEBER TRIPHENYLMETHYL.
(XIX Mittheilung.)

Zur Kenntniss der Chinocarboxoniumsalze.

(Experimental work in part by L. P. Kyriakides.)

See M. Gomberg No. 39 (1910).

4. THE CONDENSATION OF P-DIBROMOBENZENE WITH XANTHONE: A CONTRIBUTION TO THE KNOWLEDGE OF QUINOCARBONIUM SALTS. (With C. J. West.)
J. Am. Chem. Soc. 33, 1538-1548 (Sept. 1911).

5. THE SALTS OF ACRIDINE, PYRIDINE AND QUINOLINE. (Preliminary Paper.)
J. Am. Chem. Soc. 34, 1695-1706 (Dec. 1912).

6. THE SALTS OF ACRIDINE, PYRIDINE AND QUINOLINE. (Second Paper.)
J. Am. Chem. Soc. 36, 2101-2110 (Oct. 1914).
An abstract by author appears in Trans. Eighth International Congress Applied Chemistry. New York: Sept. 1912, 25, 349-350.

OTHER
PUBLICATIONS

SOME RECENT ADVANCES IN ORGANIC CHEMISTRY.

J. Am. Chem. Soc. 32, 410-426 (Mar. 1910).

(Review of) DIE DIREKTE EINFUEHRUNG VON SUBSTITUENTEN IN DEN BENZOLKERN, by A. F. Holleman, Leipsic: Veit & Co.

J. Am. Chem. Soc. 33, 999-1000 (June 1911).

(Review of) A LABORATORY MANUAL OF INORGANIC CHEMISTRY TO ACCOMPANY HOLLEMAN'S TEXT BOOK OF INORGANIC CHEMISTRY, by John B. Ekeley, New York: John Wiley & Sons.

J. Am. Chem. Soc. 34, 1434-1435 (Oct. 1912).

(Review of) PRACTICAL METHODS OF ORGANIC CHEMISTRY, by Ludwig Gattermann.

Trans. by W. B. Schober, and V. S. Babasinian, New York: MacMillan & Co., 1914.

J. Am. Chem. Soc. 35, 1066-1068 (May 1914).

Samuel T. Douglas
1875—1878

ORIGINAL
CONTRIBUTIONS

(In collaboration with Victor C. Vaughan.)

ON THE ESTIMATION OF ARSENIC AS ARSENIC ANHYDRIDE BY TREATMENT OF THE SULPHIDE WITH STRONG NITRIC ACID.

Am. Chemist 7, 348-349 (Mar. 1877).

See V. C. Vaughan No. 1, (1877).

OTHER
PUBLICATIONS

COLORED SNOW FALL IN WESTERN MICHIGAN.

Proc. Ann Arbor Scientific Assoc. 1, 117-129 (1875).

Silas H. Douglas

1845—1877

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

REPORT TO THE WATER COMMISSIONERS OF THE CITY OF DETROIT ON THE ANALYSES OF WATERS.

Pamphlet, pp. 16. Detroit: George E. Pomeroy & Co., 1854.

University of Michigan Library Pamphlets: Chemistry, Vol. 14, No. 12.

TABLES FOR QUALITATIVE ANALYSIS PREPARED TO ACCOMPANY FRESSENIUS' MANUAL OF QUALITATIVE ANALYSIS.

First Edition 1864, Second Edition 1865, Third Edition 1868. Privately printed, Ann Arbor, pp. 24.

COMMON SENSE OF VENTILATION.

Mich. Univ. Med. Jour. 1, 193-204 (June 1870).

QUALITATIVE CHEMICAL ANALYSIS. A Guide to the Practical Study of Chemistry and in the Work of Analysis. (With A. B. Prescott.)

Ann Arbor, 1874. Privately printed by Tribune Printing Co., of Detroit. pp. 259.

This includes as appendix the 24 pages of the Analytical tables compiled by Silas H. Douglas.

Silas H. Douglas

1845—1877

ORIGINAL
CONTRIBUTIONS

OTHER
PUBLICATIONS

QUALITATIVE CHEMICAL
ANALYSIS. (With A. B. Pres-
cott.) Second Edition. New
York: D. Van Nostrand &
Co., 1876. pp. 254.

QUALITATIVE CHEMICAL
ANALYSIS. (With A. B. Pres-
cott.) Third Edition. Revised
by A. B. Prescott. Containing
a study of oxidation and re-
duction by Otis C. Johnson.
New York: D. Van Nostrand
& Co., 1880. pp. 305.

Frederick L. Dunlap

1900—1907

ORIGINAL
CONTRIBUTIONS

(In collaboration with Paul
C. Freer.)

*On the Saponification of the
Substituted Acetic Esters.*

*See Paul C. Freer No. 5,
(1892).*

OTHER
PUBLICATIONS

(Translation of) INTRO-
DUCTION TO CHEMICAL PREPARA-
TION, by Hugo Erdmann.

New York: John Wiley &
Sons, 1900. pp. xiii + 141.

1. THE PRODUCTION OF ACYLAMINES BY THE INTERACTION OF SODIUM SALTS OF MONOBASIC ACIDS AND AMINE HYDROCHLORIDES.
J. Am. Chem. Soc. 24, 758-763 (Aug. 1902).
2. THE ACTION OF THE SODIUM SALTS OF DIBASIC ACIDS ON ANILINE HYDROCHLORIDE, AND OF ANILINE ON PHTHALYL CHLORIDE AND SUCCINYL CHLORIDE. (With Frederick W. Cummer.
J. Am. Chem. Soc. 25, 612-621 (June 1903).
3. A PRELIMINARY REPORT UPON THE OXIDATION OF LINSEED OIL. (With Francis D. Shenk.)
J. Am. Chem. Soc. 25, 826-836 (Aug. 1903).

Frederick L. Dunlap

1900—1907

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

(Review of) A SHORT
HAND-BOOK OF OIL ANALYSIS,
by Augustus H. Gill. Third
Edition. Philadelphia: J. B.
Lippincott Co., 1903.

J. Am. Chem. Soc. 26, 443
(Apr. 1904).

4. THE HYDROLYTIC ENZYME,-
LIPASE. (With Wm. Sey-
mour.)
J. Am. Chem. Soc. 27, 935-
946 (Aug. 1905).
5. THE ACTION OF PHENYL-
SEMICARBAZIDE AND SEMI-
CARBAZIDE HYDROCHLORIDE
ON PHTHALIC ANHYDRIDE.
J. Am. Chem. Soc. 27, 1091-
1107 (Sept. 1905).
6. THE PREPARATION OF ALDE-
HYDE-FREE ETHYL ALCOHOL
FOR USE IN OIL AND FAT
ANALYSIS.
J. Am. Chem. Soc. 28, 395-
398 (Mar. 1906).

William F. Edwards

1893—1895

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONSREFRACTOMETERS AND THEIR
USES.Proc. Am. Pharm. Assoc. 41,
139-156 (1893).

1. A NEW FORMULA FOR SPECIFIC AND MOLECULAR REFRACTION.

Am. Chem. J. 16, 625-634
(Dec. 1894).

2. QUANTITATIVE DETERMINATION OF SOME SUBSTANCES IN AQUEOUS SOLUTION BY MEANS OF THE REFRACTOMETER.

Proc. Am. Pharm. Assoc. 42,
295-308 (1894).

3. SOME NOTES ON MOLECULAR AND ATOMIC REFRACTION.

Am. Chem. J. 17, 473-506
(July 1895).

Alfred L. Ferguson

1915—

ORIGINAL
CONTRIBUTIONS

OTHER
PUBLICATIONS

(In collaboration with Richard C. Tolman.)

The Free Energy of Dilution of Hydrochloric Acid.

See Richard C. Tolman No. 3, (1912).

Paul Caspar Freer

1889—1904

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

(In collaboration with W. H. Perkin, Jr.)

Ueber den Acetyltrimethylencarbonsäureäther.

Ber. 19, 2561-2569 (1886).

The Synthetical Formation of Closed Carbon-chains. Part I (continued). The Action of Ethylene Bromide on the Sodium Derivatives of Ethylic Acetoacetate, Benzoylacetate and Acetonedicarboxylate. (With W. H. Perkin, Jr.)

J. Chem. Soc. 51, 820-853 (1887).

Inaugural Dissertation, Univ. of Munich (1887).

Appears in part in Am. Chem. J. 10, 446-457 (Nov. 1888).

Synthese von Hexamethylen-derivaten. (With W. H. Perkin, Jr.)

Ber. 21, 735-737 (1888).

Zur Kenntniss des Heptamethylenringes. (With W. H. Perkin, Jr.)

Ber. 21, 738-739 (1888).

The Synthetical Formation of Closed Carbon-chains. Part IV. Some Derivatives of Hexamethylene. (With W. H. Perkin, Jr.)

J. Chem. Soc. 53, 202-215 (1888).

Abstracted by authors in Am. Chem. J. 11, 165-168 (Mar. 1889).

Paul Caspar Freer

1889—1904

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

The Synthetical Formation of Closed Carbon-chains. Part V. Experiments on the Synthesis of Heptamethylene Derivatives. (With W. H. Perkin, Jr.)

J. Chem. Soc. 53, 215-222 (1888).

Abstracted by authors in Am. Chem. J. 11, 168-169 (Mar. 1889).

(In collaboration with Arthur Michael).

Ueber die Einwirkung von Iodwasserstoffsäure auf die Krotonsäuren.

J. prakt. Chem. (2) 40, 95-96 (July 1889).

(In collaboration with Arthur Michael.)

Ueber die Addition von Natriumacetessig- und Natriummalon-säureäthern zu den Aethern ungesättigter Säuren. (Zweite Mittheilung.)

J. prakt. Chem. (2) 43, 390-395 (Apr. 1891).

1. THE ACTION OF SODIUM ON ACETONE. (*Preliminary.*)

Am. Chem. J. 12, 335-357 (May 1890).

2. UEBER DIE EINWIRKUNG VON NATRIUM AUF ACETON.

J. prakt. Chem. (2) 42, 470-472 (Oct. 1890).

Paul Caspar Freer

1889—1904

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

3. THE CONSTITUTION OF ALIPHATIC KETONES AND THE ACTION OF SODIUM ON ACETONE.
Am. Chem. J. 13, 308-322 (May 1891).
 4. THE ACTION OF CHLORCARBONIC ETHER ON ACETONE-SODIUM. (With George O. Higley.)
Am. Chem. J. 13, 322-326 (May 1891).
 5. ON THE SAPONIFICATION OF THE SUBSTITUTED ACETIC ESTERS. (With F. L. Dunlap.)
Am. Chem. J. 14, 366-376 (May 1892).
 6. EIN VORLESUNGSVERSUCH, DIE EFFUSION DER GASE BETREFFEND.
Z. Physik. Chem. 9, 669-670 (July 1892).
 7. SOME REACTIONS WITH ACETOACETIC ETHER AND WITH SALICYLIC ETHER.
Am. Chem. J. 14, 407-422 (Oct. 1892).
Also in J. prakt. Chem. (2) 47, 235-252 (Feb. 1893).
 8. ZUR KENNTNISS DES ACETESSIGESTERS.
J. prakt. Chem. (2) 45, 414-416 (Apr. 1892).
- A TEXT-BOOK OF GENERAL DESCRIPTIVE CHEMISTRY.
Ann Arbor: Inland Press, 1892. pp. 500.
Soon revised to the succeeding:

Paul Caspar Freer

1889—1904

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

9. THE ACTION OF METALS ON NITRIC ACID. I.—THE REDUCTION OF NITRIC ACID BY COPPER. (With George O. Higley.)
Am. Chem. J. 15, 71-81 (Feb. 1893).

10. ON THE ACTION OF SODIUM ON ACETONE.
Am. Chem. J. 15, 582-605 (Nov. 1893).
Also in Ann. 278, 116-140 (1894).

11. ZUR KENNTNISS DES ACETONS.—UEBER DIE EINWIRKUNG VON CHLORKOHLENSAEUREAETHYLESTER AUF NATRIUMACETON.
Ann. 283, 380-391 (1894).
Also in Am. Chem. J. 17, 1-18 (Jan. 1895).

DESCRIPTIVE INORGANIC GENERAL CHEMISTRY: A Text-book for Colleges.

Boston: Allyn & Bacon. 1894, pp. ix + 550.

The same as above. Reprinted edition. (1895.)

12. ON THE ACTION OF SODIUM ON THE ESTERS OF ACONITIC AND CITRIC ACIDS. (Preliminary Notice.)
Am. Chem. J. 17, 31-33 Jan. 1895).

13. TETRINIC ACID (Experimental work partly with E. R. Miller).
Am. Chem. J. 17, 779-796 (Dec. 1895).

14. UEBER DIE EINWIRKUNG VON NATRIUM AUF ALDEHYDE.
Ann. 293, 326-338 (1896).
Also in Am. Chem. J. 18, 552-562 (July 1896).

THE TEACHING OF BEGINNING CHEMISTRY.

Science (n. s.) 4, 130-135 (July 1896).

Paul Caspar Freer

1889—1904

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

15. ON THE CONSTITUTION OF
SOME DERIVATIVES OF FORMIC ACID. (With P. L. Sherman, Jr.).
Am. Chem. J. 18, 562-584
(July 1896).

 16. NOTES ON NEW APPARATUS:
2.—DISTILLATION IN A VACUUM;
3.—DEMONSTRATION THAT TWO VOLUMES OF
HYDROGEN AND ONE VOLUME OF OXYGEN FORM TWO
VOLUMES OF WATER VAPOR.
Am. Chem. J. 18, 585-587
(July 1896).

 17. THE ACTION OF SODIUM UPON METHYLPROPYLENE
KETONE AND ACETOPHENONE. (With Arthur Lachman.)
Am. Chem. J. 19, 878-890
(Dec. 1897).

 18. UEBER DIE CONSTITUTION
EINIGER HYDRAZONE.
Ber. 30, 737-738 (1897).

 19. FORMAMIDE AND ITS SODIUM
AND SILVER SALTS. (With P. L. Sherman, Jr.)
Am. Chem. J. 20, 223-228
(Mar. 1898).

 20. ON THE CONSTITUTION OF
THE PHENYLHYDRAZONES.
Am. Chem. J. 21, 14-64
(Jan. 1899).
- THE ELEMENTS OF CHEMISTRY, Boston: Allyn & Bacon
1897, pp. x + 289.
- THE RELATION OF SCIENCE
EDUCATION IN THE SECONDARY
SCHOOLS TO THAT IN THE COLLEGE
AND UNIVERSITY.
Science (n. s.) 8, 210-213
(Aug. 1898).
Address of President, Natural
Science Department of
National Educational Association
(July 1898).

Paul Caspar Freer

1889—1904

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

21. THE ACTION OF METALS ON NITRIC ACID. 4.—THE REDUCTION OF NITRIC ACID BY IRON. (With Geo. O. Higley.)
Am. Chem. J. 21, 377-392 (May 1899).

22. THE ACTION OF BENZOYL CHLORIDE ON THE PHENYLHYDRAZONES OF BENZOIN.
Am. Chem. J. 22, 396-402 (Nov. (1899)).

(Review of) LABORATORY MANUAL, by H. W. Hillyer. New York: MacMillan & Co., 1899.

Pharm. Review 18, 45-46 (Jan. 1900).

23. ON THE CONSTITUENTS OF JAMAICA DOGWOOD. (With A. M. Clover.)
Am. Chem. J. 25, 390-413 (May 1901):
Appears in part in Pharm. Archives 4, 21-29 (Feb. 1901).
24. UEBER HALOGENSUBSTITUIRTE ALIPHATISCHE SAEUREN.
Ann. 319, 345-357 (1901).

Paul Caspar Freer

1889—1904

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

DURING LEAVE OF ABSENCE.

1901-1904.

25. ON THE FORMATION, DECOMPOSITION AND GERMICIDAL ACTION OF BENZOYL-ACETYL AND DIACETYL PEROXIDES. (With F. G. Novy.)
Am. Chem. J. 27, 161-192 (Mar. 1902).
See also Abstract of a paper by these authors Pop. Sci. Monthly 60, 570 (Apr. 1902).
 26. ON THE ORGANIC PEROXIDES. (With Frederick G. Novy.) A chapter in "Contributions to Medical Research." Dedicated to Dr. V. C. Vaughan. Ann Arbor: George Wahr (June 1903), p. 63-127.
 27. THE PREPARATION OF BENZOYL-ACETYL PEROXIDE AND ITS USE AS AN INTESTINAL ANTISEPTIC IN CHOLERA AND DYSENTERY. Preliminary Notes.—Publications of Bureau of Government Laboratories, Manila. (1902.) No. 2. (Second printing 1904.)
- THE BUREAU OF GOVERNMENT LABORATORIES FOR THE PHILIPPINE ISLANDS AND SCIENTIFIC POSITIONS UNDER IT.
Science (n. s.) 16, 579-580 (Oct. 1902).
- (An introduction to) "THE SPIRIT OF ORGANIC CHEMISTRY," by Arthur Lachman New York: MacMillan & Co. (1904).
- THE WORK OF THE BUREAU OF GOVERNMENT LABORATORIES OF THE PHILIPPINE ISLANDS.
Science (n. s.) 20, 105-109 (July 1904).

Moses Gomberg
1893—ORIGINAL
CONTRIBUTIONS

*Trimethylxanthine and Some
of Its Derivatives.*

Am. Chem. J. 14, 611-619
(Dec. 1892).

*Appears in part in Proc. A.
A. A. S.* 41, 107-108 (1892).

OTHER
PUBLICATIONS

1. A CHEMICAL STUDY OF THE
RESINOUS CONTENTS AND
THEIR DISTRIBUTION IN
TREES OF THE LONG-LEAF
PINE, BEFORE AND AFTER
TAPPING FOR TURPENTINE.
U. S. Department of Agri-
culture. Forestry Division
Bulletin 8, 34-49 (1893).
2. ON THE ACTION OF SOME
INORGANIC CYANIDES UPON
CHLOROCAFFEINE.
Doctor's Dissertation, Uni-
versity of Michigan, 1894.
Am. Chem. J. 17, 403-420
(June 1895).
3. ON THE ACTION OF WAG-
NER'S REAGENT UPON CAF-
FEINE AND A NEW METHOD
FOR THE ESTIMATION OF
CAFFEINE.
J. Am. Chem. Soc. 18, 331-
342 (Apr. 1896).
4. PERHALIDES OF CAFFEINE.
J. Am. Chem. Soc. 18, 347-
377 (Apr. 1896).
5. A NEW FORM OF POTASH
BULB.
J. Am. Chem. Soc. 18, 941-
942 (Nov. 1896).

Moses Gomberg

1893—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

6. (During leave of absence.)
Contribution from University of Heidelberg.
TETRAPHENYLMETHANE.
Ber. 30, 2043-2047 (Sept. 1897).
7. (During leave of absence.)
Contribution from the University of Munich.
UEBER ISONITRAMIN- UND NITROSO- ISOBUTTERSÄURE.
Ann. 300, 59-81 (Jan. 1898).
8. ON TETRAPHENYLMETHANE.
Further elaboration of Paper No. 6.
J. Am. Chem. Soc. 20, 773-780 (Oct. 1898).
9. HYDRAZO- AND-AZO DERIVATIVES OF TRIPHENYLMETHANE. (With Archibald Campbell.)
J. Am. Chem. Soc. 20, 780-789 (Oct. 1898).
10. (In collaboration with A. Van Zwaluwenburg.)
DOES TARAXACUM OFFICINALIS CONTAIN AN ALKALOID?
Proc. Am. Pharm. Assoc. 47, 305-307 (1899).
11. A PERIODIDE OF TRIPHENYLPROMOMETHANE.
J. Am. Chem. Soc. 20, 790-793 (Oct. 1898).

Moses Gomberg
1893—ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

12. DIAZOCAFFEINE.
Am. Chem. J. 23, 51-69
(Jan. 1900).
13. UEBER DIE DARSTELLUNG
DES TRIPHENYLCHLORMETH-
ANS.
Ber. 33, 3144-3149 (Oct.
1900).
J. Am. Chem. Soc. 22, 752-
757 (Nov. 1900).
Note. To latter paper, J.
Am. Chem. Soc. 22, 815
(Dec. 1900).
14. TRIPHENYLMETHYL, EIN
FALL VON DREIWERTHIGEM
KOHLENSTOFF. (Vorläufige
Mittheilung.)
Ber. 33, 3150-3163 (Oct.
1900).
J. Am. Chem. Soc. 22, 757-
771 (Nov. 1900). (Paper I.
Triphenylmethyl Series.)
15. ON TRIPHENYLCHLORME-
THANE.
J. Am. Chem. Soc. 23, 109-
110 (Feb. 1901).
16. ON TRITOLYLCHLORMETH-
ANE. (With O. W. Voed-
isch.)
J. Am. Chem. Soc. 23, 177-
178 (Mar. 1901).
17. ON TRIVALENT CARBON.
(Reply to J. F. Norris.)
(Paper II.)
Am. Chem. J. 25, 317-335
(Apr. 1901).

Moses Gomberg

1893—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

18. ON TRIVALENT CARBON.
(Paper III.)
J. Am. Chem. Soc. 23, 496-502 (July 1901).
Ber. 34, 2726-2733 (Sept. 1901).
19. UEBER DAS TRIPHENYLMETHYL. (IV. Mittheilung.)
Ber. 35, 1822-1840 (May 1902).
J. Am. Chem. Soc. 24, 597-628 (July 1902). (Paper IV.)
20. UEBER TRIPHENYLMETHYL. EIN BEITRAG ZUR KENNTNISS DER CARBONIUMSALZE. (V. Mittheilung.)
Ber. 35, 2397-2408 (July 1902).
21. UEBER TRIPHENYLMETHYL. CONDENSATION ZUM HEXAPHENYLAETHAN. (VI. Mittheilung.)
Ber. 35, 3914-3920 (Nov. 1902).
22. UEBER TRIPHENYLMETHYL. CONDENSATION MITTELS SALZSAURE ZUM HEXAPHENYLAETHAN. (VII Mittheilung).
Ber. 36, 376-388 (Feb. 1903).
23. THE ACTION OF ZINC ON TRIPHENYLCHLORMETHANE.
Am. Chem. J. 29, 364-371 (Apr. 1903).

Moses Gomberg

1893—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

24. UEBER TETRAPHENYLMETHAN. (With H. W. Berger.)
Ber. 36, 1088-1092 (Apr. 1903).
25. UEBER TRIPHENYLMETHYLACETAT. (With G. T. Davis.)
Ber. 36, 3924-3927 (Nov. 1903).
J. Am. Chem. Soc. 25, 1269-1274 (Dec. 1903).
26. UEBER DIE EXISTENZFAEHIGKEIT EINER KLASSE VON KOERPERN, DIE DEM TRIPHENYLMETHYL ANALOG SIND. (Vorläufige Mittheilung.)
Ber. 36, 3927-3930 (Nov. 1903).
J. Am. Chem. Soc. 25, 1274-1277 (Dec. 1903).
27. UEBER TRIPHENYLMETHYL. (VIII. Mittheilung.)
Ber. 37, 1626-1644 (May 1904).
(Review of) UEBER DIE BASISCHE EIGENSCHAFTEN DES SAUERSTOFFS UND KOHLENSTOFFS, by Julius Schmidt.
Berlin: Gebrüder Borntraeger, 1904.
J. Am. Chem. Soc. 26, 329-330 (Mar. 1904).
28. UEBER TRIPHENYLMETHYL. (IX. Mittheilung.) (With L. H. Cone.)
Ber. 37, 2033-2051 (May 1904).
29. UEBER TRIPHENYLMETHYL. (X. Mittheilung.) (With L. H. Cone.)
Ber. 37, 3538-3547 (Oct. 1904).

Moses Gomberg

1893—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

30. (In collaboration with N. E. Tousley.)
SOME TRI-*p*-TOLYLMETH-
ANE DERIVATIVES.
J. Am. Chem. Soc. 26, 1516-
1523 (Nov. 1904).
31. UEBER TRIPHENYLMETHYL.
(XI. Mittheilung.) (With
L. H. Cone.)
Ber. 38, 1333-1344 (Apr.
1905).
32. UEBER TRIPHENYLMETHYL.
(XII. Mittheilung.) (With
L. H. Cone.)
Ber. 38, 2447-2458 (July
1905).
33. UEBER TRIPHENYLMETHYL.
(XIII. Mittheilung.)
(With L. H. Cone.)
Ber. 39, 1461-1470 (Apr.
1906).
34. UEBER TRIPHENYLMETHYL.
(XIV. Mittheilung.) (With
L. H. Cone.)
Ber. 39, 2957-2970 (Aug.
1906).
35. UEBER TRIPHENYLMETHYL.
(XV. Mittheilung.) (With
L. H. Cone.)
Ber. 39, 3274-3297 (Oct.
1906).
36. UEBER TRIPHENYLMETHYL.
(XVI. Mittheilung.) TAÜ-
TOMERIE IN DER TRIPHENYL-
METHAN-REIHE.)
Ber. 40, 1847-1888 (May
1907).

Moses Gomberg

1893—

ORIGINAL
CONTRIBUTIONS

37. UEBER TRIPHENYLMETHYL.
(XVII Mittheilung.) TAU-
TOMERIE IN DER TRIPHENYL-
METHAN-REIHE.)
Ber. 42, 406-417 (Feb.
1909).
38. UEBER TRIPHENYLMETHYL.
(XVIII Mitteilung.) ZUR
KENNTNISS DER CHINOCAR-
BONIUMSALZE. (With L. H.
Cone.) (Experimental
work in small part by O. B.
Winter.)
Ann. 370, 142-208* (Nov.
1909).
Berichtigung to XVIII
Mitteilung above.
Ann. 371, 388-389 (Feb.
1910).
39. UEBER TRIPHENYLMETHYL.
(XIX Mitteilung.) ZUR
KENNTNISS DER CHINOCAR-
BONIUMSALZE. (With L. H.
Cone.) (Experimental
work in part with L. P.
Kyriakides.)
Ann. 376, 183-238 (Oct.
1910).
40. ON TRIPHENYLMETHYL.
(Paper XX.) (With D. D.
Van Slyke.)
J. Am. Chem. Soc. 33, 531-
549 (Apr. 1911).
41. THE ACTION OF HALOGEN
ACIDS UPON THE OXYARYL-
XANTHENOLS. (Preliminary
paper.) (With C. J. West.)
J. Am. Chem. Soc. 33, 1211-
1213 (July 1911).

OTHER
PUBLICATIONS

(Review of) NEUERE THEO-
RETISCHE ANSCHAUUNGEN AUF
DEM GEBIETE DER ORGANISCHEN
CHEMIE, by Verdinand Hen-
rich. Braunschweig: F. Vie-
weg & Sohn, 1908.
J. Am. Chem. Soc. 31, 726-
727 (June 1909).

Moses Gomberg

1893—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

42. ON TRIPHENYLMETHYL.
XXI.
QUINOCARBONIUM SALTS OF
THE HYDROXY-XANTHENOLS.
(With C. J. West.)
J. Am. Chem. Soc. 34, 1529-
1569 (Nov. 1912).
43. TRIPHENYLMETHYL. XXII.
ETHERS OR OXIDES IN THE
TRIPHENYLMETHANE SE-
RIES.
J. Am. Chem. Soc. 35, 200-
210 (Feb. 1913).
Appears also, abstracted by
author, in Trans. Eighth
International Congress Ap-
plied Chemistry. New
York: Sept. 1912, 25, 371.
44. UEBER TRIPHENYLMETHYL-
ONYL.
Ber. 46, 225-228 (Feb.
1913).
45. THIOPHENE ANALOGS OF
TRIPHENYLMETHYL. (Pre-
liminary note.) (With R.
L. Jickling.)
J. Am. Chem. Soc. 35, 446-
447 (Apr. 1913).
46. ON TRIPHENYLMETHYL.
XXIII.
TAUTOMERISM OF THE HY-
DROXY-TRIPHENYL CARBIN-
OLS.
J. Am. Chem. Soc. 35,
1035-1042 (Aug. 1913).
- (Review of) RECENT AD-
VANCES IN ORGANIC CHEMIS-
TRY, by A. W. Stewart. Lon-
don: Longmans Green & Co.,
1911. Second Edition.
J. Am. Chem. Soc. 35, 844-
845 (June 1913).

Moses Gomberg
1893—ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

THE EXISTENCE OF FREE
RADICALS. (Address before
New York Section Am. Chem.
Soc. on occasion of presenta-
tion of William H. Nichols
Medal. (Mar. 6, 1914.)

J. Am. Chem. Soc. 36, 1144-
1170 (June 1914).

47. TRIPHENYLMETHYL. XXIV.
THE ADDITIVE COMPOUNDS
OF TRIPHENYLMETHYL AND
SOME SATURATED HYDRO-
CARBONS. (With C. S.
Schoepfle.)
J. Am. Chem. Soc. 37,
2569-2574 (Nov. 1915).
48. TRIPHENYLMETHYL. XXV.
PREPARATION OF p-HYD-
ROXY - TRIPHENYLCARBINOL
AND ATTEMPTS TO ISOLATE
THE CORRESPONDING TRI-
ARYLMETHYL. (With R. L.
Jickling.)
J. Am. Chem. Soc. 37, 2575-
2591 (Nov. 1915).

William J. Hale

1904—

ORIGINAL
CONTRIBUTIONS

Contribution from Harvard University.

(In collaboration with Henry B. Hill.)

Notiz Ueber 2-phenyl-4-nitrophenol.

Ber. 33, 1241-1242 (May 1900).

Contribution from Harvard University.

(In collaboration with I. K. Phelps).

On Dehydromucic Acid and Certain of its Derivatives.

Am. Chem. J. 25, 445-463 (June 1901).

Contribution from Harvard University.

(In collaboration with Henry B. Hill.)

On the Oximes of Nitromalonic Aldehyde.

Doctor's Dissertation. Harvard University. 1902.

Am. Chem. J. 29, 253-274 (Mar. 1903).

- I. (In collaboration with Henry B. Hill.)

ON THE CONDENSATION OF
NITROMALONIC ALDEHYDE
WITH BENZYL METHYL KE-
TONE.

Am. Chem. J. 33, 1-21
(Jan. 1905).

Experimental work completed at the University of Michigan.

OTHER
PUBLICATIONS

William J. Hale

1904—

ORIGINAL
CONTRIBUTIONS

2. GRIGNARD SYNTHESSES IN
THE FURFURAN GROUP.
(With W. D. McNally and
C. J. Pater.)
Am. Chem. J. 35, 68-78
(Jan. 1906).

3. ON THE CONDENSATION OF
NITROMALONIC ALDEHYDE
WITH ACETONYL ACETONE.
(With Charles A. Robert-
son.)
Am. Chem. J. 39, 680-696
(June 1908).

OTHER
PUBLICATIONS

(In collaboration with Alex-
ander Smith.)

A LABORATORY OUTLINE OF
GENERAL CHEMISTRY. Third
Edition. New York: The Cen-
tury Company, May 1907, pp.
ix + 136.

Translated into Russian by
Leo Schmelling. St. Peters-
burg. 1908, pp. xii + 157.

(In collaboration with Alex-
ander Smith.)

SUPPLEMENTARY PAMPHLET
TO THE LABORATORY OUTLINE OF
GENERAL CHEMISTRY. The
Century Co., June 1907, pp. 12.

(In collaboration with Alex-
ander Smith.)

A LABORATORY OUTLINE OF
GENERAL CHEMISTRY. Fourth
Edition. New York: The Cen-
tury Co., Jan. 1908, pp. ix +
136.

THE RELATION OF COLOR AND
CHEMICAL CONSTITUTION.

Pop. Sci. Monthly 72, 116-
139 (Feb. 1908).

THE CALCULATIONS OF GEN-
ERAL CHEMISTRY. New York:
D. van Nostrand Co., Sept.
1909, pp. xi + 174.

THE CALCULATIONS OF GEN-
ERAL CHEMISTRY. Second Edi-
tion. New York: D. van Nos-
trand Co., Jan. 1910, pp. xi +
174.

William J. Hale

1904—

ORIGINAL
CONTRIBUTIONS

4. THE CONSTITUTION OF DEHYDROACETIC ACID.
J. Am. Chem. Soc. 33, 1119-1135 (July 1911).

OTHER
PUBLICATIONS

(Review of) LABORATORY EXPERIMENTS IN GENERAL CHEMISTRY, by H. Schlundt. Columbia, Mo.: E. W. Stephens, Pub. Co., 1910.

J. Am. Chem. Soc. 33, 451-458 (Mar. 1911).

(Review of) QUALITATIVE CHEMICAL ANALYSIS, by J. I. D. Hinds. Easton, Pa.: Chem. Pub. Co., 1910.

J. Am. Chem. Soc. 33, 997-1008 (June 1911).

(Review of) QUALITATIVE CHEMICAL ANALYSIS. Second Edition. Revised, by O. F. Tower. Philadelphia: P. Blakiston's Son & Co., 1911.

J. Am. Chem. Soc. 33, 1419-1420 (Aug. 1911).

THE CALCULATIONS OF GENERAL CHEMISTRY. Third Edition. New York: D. van Nostrand Co. (Oct. 1911), pp. xi + 174.

5. THE FORMATION OF PYRIMIDINES BY USE OF NITROMALONIC ALDEHYDE. (With Harvey C. Brill.)
J. Am. Chem. Soc. 34, 82-94 (Jan. 1912).
6. THE FORMATION OF METATHIAZINES FROM THIOUREA. (With Harvey C. Brill.)
J. Am. Chem. Soc. 34, 295-300 (Mar. 1912).

William J. Hale

1904—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

7. DAS VERHALTEN DES ACETONYL-ACETONS GEGEN β -DIALDEHYDE.

Ber. 45, 1596-1603 (June 1912).

8. PARABROMBENZOYL ACETIC ESTER. (With Lambert Thorp.)

Trans. Eighth International Congress of Applied Chemistry 6, 132-137 (Sept. 1912).

9. STUDIES IN THE CYCLOPENTADIENE SERIES (I). 2, 3-DIACETYL-5-NITROCYCLOPENTADIENE.

J. Am. Chem. Soc. 34, 1580-1590 (Nov. 1912).

10. STUDIES IN THE CYCLOPENTADIENE SERIES (II). 2, 3-DIBENZOYL-5-NITROCYCLOPENTADIENE. (With Lambert Thorp.)

J. Am. Chem. Soc. 35, 68-75 (Jan. 1913).

(Review of) ELEMENTARY CHEMICAL THEORY AND CALCULATIONS, by Joseph Knox. London: Gurney & Jackson, 1912.
J. Am. Chem. Soc. 35, 220- (Feb. 1913).

11. STUDIES IN THE CYCLOPENTADIENE SERIES (III). CERTAIN DERIVATIVES OF 2, 3-DIBENZOYL-5-NITROCYCLOPENTADIENE. (With Lambert Thorp.)

J. Am. Chem. Soc. 35, 262-272 (Mar. 1913).

(Review of) THE PRINCIPLES OF ORGANIC CHEMISTRY. (International Chemical Series), by J. F. Norris. New York: McGraw-Hill Book Co., 1912.

J. Am. Chem. Soc. 35, 842-844 (June 1913).

William J. Hale

1904—

ORIGINAL
CONTRIBUTIONS

12. THE CONSTITUTION OF ACETYLACETONE-UREA.
J. Am. Chem. Soc. 36, 104-115 (Jan. 1914).
13. THE CONSTITUTION OF ACETYLACETONE-THIOREA.
(With Arthur G. Williams.)
J. Am. Chem. Soc. 38, 594-600 (Mar. 1915).
14. THE CONSTITUTION OF THE SO-CALLED DITHIOURIMIDO-ACETYLACETONE.
J. Am. Chem. Soc. 37, 1544-1552 (June 1915).
15. THE CONSTITUTION OF THE NITRO- α -CARBOPYRROLIC ACIDS. (With Wm. V. Hoyt.)
J. Am. Chem. Soc. 37, 2538-2552 (Nov. 1915).

OTHER
PUBLICATIONS

(Review of) EXPERIMENTS ARRANGED FOR STUDENTS IN GENERAL CHEMISTRY. (Shorter course), by Edgar F. Smith and Harry F. Keller. Philadelphia: P. Blakiston's Son & Co., 1913.
J. Am. Chem. Soc. 36, 204. (Jan. 1914).

(Review of) A TEXT BOOK OF CHEMISTRY, by Wm. A. Noyes. New York: Henry Holt & Co., 1913.
J. Am. Chem. Soc. 36, 607-609 (Mar. 1914).

James E. Harris

1911—

ORIGINAL
CONTRIBUTIONS

Contribution from the Department of Physics at the University of Michigan.

The Elastic Properties of Bismuth Wires.

Physic. Rev. 35, 95-119 (Aug. 1912).

Doctor's Dissertation, University of Michigan, 1911.

Appearing in part in abstract form in collaboration with Professor K. E. Guthe.

Physic. Rev. 32, 228-229 (Feb. 1911).

OTHER
PUBLICATIONS

1. LIME-SULPHUR SPRAY. Michigan Experiment Station Technical Bulletin No. 6. pp. 15 (Jan. 6, 1911).

2. SOME ADSORPTION PHENOMENA IN SOILS AND KAOLIN. *J. Physic. Chem.* 18, 355-372 (Apr. 1914).

Appearing also in monograph form under title of SOLID ACIDITY.

Michigan Experiment Station Technical Bulletin No. 19. pp. 15 (July 1914).

SOIL ACIDITY AND METHODS FOR ITS DETECTION.

Science (n.s.) 40, 491-493 (Oct. 1914).

George O. Higley

1891—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

(In collaboration with Paul
C. Freer.)

*The Action of Chlor-car-
bonic Ether on Aceton-
Sodium.*

*See Paul C. Freer No. 4
(1891).*

(In collaboration with Paul
C. Freer.)

*The Action of Metals on
Nitric Acid.—(I) The Re-
duction of Nitric Acid by
Copper.*

*See Paul C. Freer No. 9
(1893).*

- I. THE ACTION OF METALS ON
NITRIC ACID. III. THE RE-
DUCTION OF NITRIC ACID BY
COPPER AND BY LEAD.

*Am. Chem. J. 17, 18-26
(Jan. 1895).*

2. NOTES ON NEW APPARATUS
I. THE ELECTROLYSIS OF
HYDROCHLORIC ACID. (With
B. J. Howard.)

*Am. Chem. J. 18, 584-585
(July 1896).*

3. THE ACTION OF METALS ON
NITRIC ACID. III. THE RE-
DUCTION OF NITRIC ACID BY
SILVER. (With W. E. Davis.)

*Am. Chem. J. 18, 587-590
(July 1896).*

George O. Higley

1891—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

(In collaboration with Paul C. Freer.)

THE ACTION OF METALS ON NITRIC ACID. IV. THE REDUCTION OF NITRIC ACID BY IRON, AND THE ELECTROLYSIS OF NITRIC ACID.

See Paul C. Freer No. 21 (1899).

4. CONCERNING CERTAIN COMPOUNDS OF CHROMIUM.
J. Am. Chem. Soc. 26, 613-632 (June 1904).

5. CHANGES IN THE EXCRETION OF CARBON DIOXIDE, RESULTING FROM BICYCLING. (With W. P. Bowen.)
Am. J. Physiol. 12, 311-335 (Dec. 1904).

6. A BALANCE - CHEMOGRAPH, AND THE EXCRETION OF CARBON DIOXIDE DURING REST AND WORK.
Doctor's Dissertation, University of Michigan, 1905.

Winfield S. Hubbard

1911—1914

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

1. STUDIES OF THE TRYPTIC DIGESTION OF SILK. (First Paper.)
J. Am. Chem. Soc. 33, 2032-2035 (Dec. 1911).
2. DIFFICULTIES IN THE COLORIMETRIC ESTIMATION OF VANILLIN.
J. Ind. Eng. Chem. 4, 669-670 (Sept. 1912).
J. Am. Pharm. Assoc. 2, 902 (1913).
3. (In collaboration with David M. Cowie.)
A RAPID CLINICAL METHOD FOR THE ESTIMATION OF TOTAL FAT IN INFANTS' STOOLS.
Am. Jour. Diseases of Children 6, 192-198 (Sept. 1913).

George A. Hulett

1899—1905

ORIGINAL
CONTRIBUTIONS'OTHER
PUBLICATIONS

*Ueber die Reinigung des
Wassers durch destillation.*

Z. Physik. Chem. 21, 297-301
(Nov. 1896).

*Der Stetige Uebergang Fest-
Flüssig.*

*Inaugural Dissertation, Uni-
versity of Leipsic, 1898.*

*Appears also in Z. Physik.
Chem.* 28, 629-672 (Apr. 1899).

1. UEBER KALIBRIERUNG EINER
GLASROEHRE UND EINIGE
KOMPRESSIBILITAETSKOEFFI-
ZIENTEN.
Z. Physik. Chem. 33, 237-
244 (Apr. 1900).
2. DIE DESTILLATION VON
AMALGAMEN UND DIE REIN-
IGUNG DES QUECKSILBERS.
Z. Physik. Chem. 33, 611-
621 (June 1900).
3. BEZIEHUNGEN ZWISCHEN
OBERFLAECHENSPANNUNG
UND LOESLICHKEIT.
Z. Physik. Chem. 37, 385-
406 (June 1901).
4. THE SOLUBILITY OF GYP-
SUM. (With Lucius E. Al-
len.)
J. Am. Chem. Soc. 24, 667-
679 (July 1902).
5. BEZIEHUNG ZWISCHEN NE-
GATIVEM DRUCK UND OS-
MOTISCHEM DRUCK.
Z. Physik. Chem. 42, 353-
368 (Dec. 1902).

George A. Hulett

1899—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

6. GESAETTIGTE GIPSLOESUN-
GEN ALS BASIS FUER LEIT-
FAEHIGKEIT.
Z. Physik. Chem. 42, 577-
583 (Feb. 1903).
7. LOESLICHKEIT UND KORN-
GROESSE. Erwiderung an
Herrn Prof. F. Kohlrausch.
Z. Physik. Chem. 47, 357-
367 (Mar. 1904).
8. CHLOR IN DEM MITTELST
CHLORBARYUM NIEDER-GE-
SCHLAGENEN BARYUMSUL-
FAT. (With L. H. Duschak.)
Z. anorg. Chem. 40, 196-217
(July 1904).
9. QUECKSILBERSULFAT UND
DIE NORMALELEMENTE.
Z. Physik. Chem. 49, 483-
501 (Sept. 1904).
(Presented in part before
International Electrical
Congress, at St. Louis,
1904.)
10. VOLATILIZATION OF PLATI-
NUM. (With H. W. Ber-
ger.)
J. Am. Chem. Soc. 26,
1512-1515 (Nov. 1904).
11. (In collaboration with H.
S. Carhart.)
PREPARATION OF MATERIALS
FOR STANDARD CELLS AND
THEIR CONSTRUCTION.
Trans. Am. Electrochem.
Soc. 5, 59-72 (1904).

George A. Hulett

1899—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

12. (In collaboration with H. S. Carhart.)
A STUDY OF THE MATERIALS
USED IN STANDARD CELLS
AND THEIR PREPARATION.
Trans. Am. Electrochem.
Soc. 6, II, 109-117 (1904).
13. THE SOLUBILITY OF GYPSUM AS AFFECTED BY SIZE OF PARTICLES AND BY DIFFERENT CRYSTALLOGRAPHIC SURFACES.
J. Am. Chem. Soc. 27, 49-56 (Jan. 1905).
- THE VOLUMETRIC COMPOSITION OF WATER VAPOR.
(A lecture experiment.)
J. Mich. Schoolmasters' Club
40, 32-34 (1905).
14. PREPARATION OF NITROGEN FROM THE ATMOSPHERE.
J. Am. Chem. Soc. 27, 1415-1418 (Nov. 1905).
15. THE DISTILLATION OF AMALGAMS AND THE PURIFICATION OF MERCURY. (With Howard D. Minchin.)
Phys. Rev. 21, 388-398 (Dec. 1905).
16. A LOW VOLTAGE STANDARD CELL.
Trans. Am. Electrochem. Soc. 7, 333-339 (1905).

Otis Coe Johnson

1873—1912

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

A NEW TEST FOR ARSENIC.
Chem. News 38, 301 (Dec.
1878).

NEGATIVE BONDS, AND RULE
FOR BALANCING EQUATIONS.
Chem. News 42, 51 (July
1880).

Pharm. Record. 3, 394-395
(Oct. 1882).

A STUDY OF OXIDATION AND
REDUCTION.

(A Chapter in Douglas &
Prescott's Qualitative Analy-
sis, Third Edition.) New
York: 1880.

DETECTION OF SILVER IN BIS-
MUTH SUBCARBONATE.

Proc. Mich. State Pharm.
Assoc. 3, 148 (1885).

USEFUL ANALYTICAL TESTS
FOR SILVER, ARSENIC AND TIN.

Proc. Mich. State Pharm.
Assoc. 3, 148-149 (1885).

Pharm. Record 5, 420 (Dec.
1885).

THE PROPORTION OF MER-
CURIC OXIDE IN "MERCURY
WITH CHALK."

Proc. Mich. State Pharm.
Assoc. 4, 133 (1886).

THE ANALYSIS OF CHEMI-
CALS SOLD AS STRICTLY PURE.

Proc. Mich. State Pharm.
Assoc. 7, 99-102 (1887).

(In collaboration with A. B.
Prescott.)

QUALITATIVE CHEMICAL AN-
ALYSIS. Fourth Edition. Re-
vised from former text of
Douglas & Prescott. New

Otis Coe Johnson
1873—1912

ORIGINAL
CONTRIBUTIONS

OTHER
PUBLICATIONS

York: D. Van Nostrand & Co., 1892. pp. 317.

BRIEF DIRECTIONS FOR QUALITATIVE ANALYSIS.

Ann Arbor: Privately printed. pp. 24.

Second and Third Editions only re-printings.

(In collaboration with A. B. Prescott.)

QUALITATIVE CHEMICAL ANALYSIS.

Fifth Edition, revised.

New York: D. Van Nostrand & Co. (1901). pp. xi + 420.

ANALYTICAL EQUATIONS.

Fourth Edition of former "Directions for Qualitative Analysis."

Ann Arbor: Privately printed. 1906. pp. 38.

(In collaboration with A. B. Prescott.)

QUALITATIVE CHEMICAL ANALYSIS. Sixth Edition, revised by Otis C. Johnson. Containing also an appendix by H. H. Willard. New York: D. Van Nostrand & Co. (1908.) pp. xi + 427.

Corrected in 1909: pp. xl + 428.

ANALYTICAL EQUATIONS.

Fifth Edition, revised and rewritten (with R. J. Carney.)

Ann Arbor: Privately printed by Eschenbach & Co., Easton, Pa., 1909. pp. 40.

Arthur Lachman

1896—1897

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

1. ON THE EXISTENCE OF PENTA-ETHYL NITROGEN.
Am. Chem. J. 18, 372-375
(May 1896).

2. THE CONSTITUTION OF ACID AMIDES.
Am. Chem. J. 18, 600-608
(July 1896).

3. DIE EINWIRKUNG VON ZINK-ÄETHYL AUF PHENYLJODID-CHLORID.
Ber. 30, 887-888 (Apr. 1897).

4. THE PREPARATION OF ZINC ETHYL.
Am. Chem. J. 19, 410-411
(May 1897).

(In collaboration with Paul C. Freer.)

THE ACTION OF SODIUM UPON METHYLPROPYL-KETONE AND ACETOPHENONE.

See Paul C. Freer No. 17, 1897.

Joseph S. Laird

1912—

ORIGINAL
CONTRIBUTIONS

Contribution from Princeton University.

The Inclusions in Electrolytic Silver and Their Effect on the Electro-chemical Equivalent of Silver. (With G. A. Hulett.

Trans. Am. Electrochem. Soc. 22, 345-365 (1912).

Contribution from Princeton University.

The Electrochemical Equivalent of Cadmium. (With G. A. Hulett.)

Trans. Am. Electrochem. Soc. 22, 385-396 (1912).

This and the preceding article bound together under one cover as a Doctor's Dissertation, Princeton University, 1912.

OTHER
PUBLICATIONS

John W. Langley

1875—1889

ORIGINAL
CONTRIBUTIONS

1. ON THE RELATIONSHIP OF
STRUCTURE, DENSITY AND
CHEMICAL COMPOSITION OF
STEEL.

Am. Chemist 7, 175-178
(Nov. 1876).

Chem. News 35, 137-138
(Apr. 1877).

2. THE SUB-AQUEOUS DISSOCIA-
TION OF CERTAIN SALTS.
(With Charles K. McGee.)
Science 2, 288-289 (Aug.
1883).

Proc. Am. Assoc. Adv. Sci-
ence 32, 148-154 (1883).

3. UEBER EINE WAHRSCHEIN-
LICHE AEUSSERUNG CHEM-
ISCHER ANZIEHUNG ALS ME-
CHANISCHER ZUG.

Z. Physik. Chem. 2, 83-91
(Feb. 1888).

OTHER
PUBLICATIONS

ELECTRO-THERAPEUTICS.

Physician and Surgeon 1,
159-161 and 205-208 and 258-
261 and 296-299 (1879).

VENTILATION.

Ann. Report. Mich. State
Board of Health (1882), p.
108-116.

NOTES ON A COURSE OF LEC-
TURES ON GENERAL CHEMISTRY
AND CHEMICAL PHYSICS.

Ann Arbor: S. C. Andrews,
1882. pp. 114.

CHEMICAL AFFINITY. An ad-
dress.

Proc. Am. Assoc. Adv. Sci-
ence 33, 141-161 (1884).

Appears, in part, in Science
4, 234, and 236 (Sept. 1884).

AN EXPLANATION OF GLAD-
STONE AND TRIBE'S "2-3 LAW"
IN CHEMICAL DYNAMICS.

Proc. Am. Assoc. Adv. Sci-
ence 33, 185-190 (1884).

ON THE CONCENTRATION OF
CERTAIN ACID RADICALS BY THE
DIFFERENTIAL ACTION OF CHEM-
ISM.

Proc. Am. Assoc. Adv. Sci-
ence 34, 130-131 (1885).

METHODS OF ANALYSIS OF
WATERS. And Statement of
Results. (Committee Report.)

Proc. Am. Assoc. Adv. Sci-
ence 38, 27-34 (1889).

David M. Lichty

1891—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

1. AN INTRODUCTORY STUDY OF THE INFLUENCE OF THE SUBSTITUTION OF HALOGENS IN ACIDS UPON THE RATE AND LIMIT OF ESTERIFICATION.
Am. Chem. J. 17, 27-31 (Jan. 1895).
2. ON THE ESTERIFICATION OF HALOGEN-SUBSTITUTED ACETIC ACIDS. Second Paper.
Am. Chem. J. 18, 590-600 (July 1896).
3. DIE GESCHWINDIGKEIT DER ESTERBILDUNG UND DIE LEITFAEHIGKEIT DER α -, β -, γ -, UND δ -HALOGENFETTSAEUREN.
Ann. 319, 369-390 (Dec. 1901).
4. THE SOLUBILITY OF THE CHLORIDE, THE BROMIDE, AND THE IODIDE OF LEAD IN WATER. AT TEMPERATURES FROM 0° UPWARD.
J. Am. Chem. Soc. 25, 469-474 (May 1903).
5. (During Leave of Absence.) THE CHEMICAL KINETICS OF THE DECOMPOSITION OF OXALIC ACID IN CONCENTRATED SULFURIC ACID.
J. Physic. Chem. 11, 225-272 (Mar. 1907).
Appears also as Inaugural Dissertation, University of Heidelberg, 1906.

David M. Lichty

1891—

ORIGINAL
CONTRIBUTIONS

6. ABSOLUTE SULFURIC ACID:
ITS PREPARATION FROM SUL-
FUR TRIOXIDE AND WATER;
ITS SPECIFIC ELECTRIC CON-
DUCTIVITY AND THAT OF
MORE DILUTE ACID.
J. Am. Chem. Soc. 30, 1834-
1846 (Dec. 1908).

7. SOME PHYSICAL CONSTANTS
OF SULFUR TRIOXIDE; MELT-
ING AND BOILING POINTS,
DENSITY, COEFFICIENT OF
EXPANSION AND MOLECULAR
WEIGHTS.
J. Am. Chem. Soc. 34, 1440-
1448 (Nov. 1912).
An abstract by author ap-
pears under same heading
in Trans. Eighth Interna-
tional Congress Applied
Chemistry, New York, 1912,
22, 205-206.

OTHER
PUBLICATIONS

SOME CRITICISMS OF THE
WORK IN CHEMISTRY AS AC-
COMPLISHED BY THE STUDENTS
IN THE HIGH SCHOOL.

Proc. Mich. Schoolmasters'
Club, 43, 54-55 (1908).

PREPARATION AND PROPER-
TIES OF PERMANENTLY LIQUID
SULFUR TRIOXIDE.

J. Mich. Schoolmasters'
Club 48, 66-67 (1913).

Samuel C. Lind

1905—1915

ORIGINAL
CONTRIBUTIONS

Contribution from Chemical Laboratory of the Massachusetts Institute of Technology.

The Constitution of Potassium Ruthenium Nitroschloride in Aqueous Solution.

J. Am. Chem. Soc. 25, 928-932 (Sept. 1903).

Ueber die Bildung des Bromwasserstoffgases aus den Elementen.

Inaugural Dissertation, University of Leipsic, 1906.

Contribution from the University of Leipsic.

(In collaboration with Max Bodenstein.)

Geschwindigkeit der Bildung des Bromwasserstoffes aus seinen Elementen.

Z. Physik. Chem. 57, 168-192 (Nov. 1906).

OTHER
PUBLICATIONS

1. ALKALIMETRIC METHOD FOR THE DETERMINATION OF TUNGSTEN IN STEEL. (With B. C. Trueblood.)
J. Am. Chem. Soc. 29, 477-481 (Apr. 1907).

2. THE VELOCITY OF HYDROLYSIS OF AN INORGANIC SALT: POTASSIUM RUTHENIUM CHLORIDE. (With F. W. Bliss.)
J. Am. Chem. Soc. 31, 868-885 (Aug. 1909).

(Review of) CALCULATIONS OF GENERAL CHEMISTRY, by William J. Hale. New York: D. Van Nostrand & Co., 1909.
Mich. Alumnus 16, 254 (Feb. 1910).

THEORIES OF SOLUTION.
J. Mich. Schoolmasters' Club 45, 39-44 (1910).

Samuel C. Lind

1905—1915

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

3. (During Leave of Absence.)
Contribution from the Laboratory of Mme. Curie.
SUR QUELQUES EFFETS
CHIMIQUES DES RAYONS
DU RADIUM.
Le Radium 8, 289-292
(Aug. 1911).
4. (During Leave of Absence.)
Contribution from the
Radium Institute of Vienna.
OZONISIERUNG DES SAUER-
STOFFES DURCH α -STRAH-
LEN.
Sitzungsberichte d. K. Aka-
demie d. Wissenschaften in
Wien. Mathem.-Naturw.
Klasse: Bd. CXX. Abt. IIa.
1709-1724 (Dec. 1911).
Monats. 33, 295-310 (1912).
Am. Chem. J. 47, 397-415
(May 1912).
Correction to the latter
Am. Chem. J. 49, 405-406
(May 1913).
Appears also, in part, in Le
Radium 9, 104-106 (Mar.
1912).
5. GASEOUS IONS AND CHEM-
ICAL ACTIVITY.
Trans. Am. Electrochem.
Soc. 21, 177-184 (1912).
6. ON THE NATURE OF THE
CHEMICAL ACTION PRODUC-
ED BY α -PARTICLES AND THE
PROBABLE ROLE PLAYED BY
IONS.
J. Physik. Chem. 16, 564-
613 (Oct. 1912).

Samuel C. Lind

1905—1915

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

Appears also, in part, in *Le Radium* 9, 426-431 (1912).
Note to the latter *Le Radium* 10, 174 (May 1913).

7. THE TRANSFORMATION OF
RADIANT INTO CHEMICAL
ENERGY.

Trans. Am. Electrochem. Soc. 24, 339-349 (1913).

Appears also, in part, in *Le Radium* 11, 108-111 (1914).

8. DER EXPERIMENTELLE
NACHWEIS DER GÜLTIGKEIT
DES FARADAYSCHEN GESETZES
BEI GASREAKTIONEN.

Z. Physik. Chem. 84, 759-761 (Oct. 1913).

DURING LEAVE OF ABSENCE.

1913-1915.

9. Contribution from the U. S.
Bureau of Mines.

THE RADIUM: URANIUM
RATIO IN CARNOTITES.
(With C. F. Whittemore.)

Publication Bureau of
Mines, Mineral Technol-
ogy 6, Technical Paper 88,
1915.

J. Am. Chem. Soc. 2066-2082 (Oct. 1914).

10. PRACTICAL METHODS FOR
THE DETERMINATION OF
RADIUM. I. INTERCHANGE-
ABLE ELECTROSCOPE AND ITS
USE.

J. Ind. Eng. Chem. 7, 406-410 (May 1915).

Chem. News 110, 218-219
and 228-231 and 239-241
(1914).

(Review of) *PHYSIKALISCHE
CHEMIE DER HOMOGENEN UND
HETEROGENEN GASREAKTIONEN
UNTER BESONDER BERUECKSICH-
TIGUNG DER STRAHLUNGS- UND
QUANTEN-LEHRE SOWIE DES
NERNSTSCHEN THEOREMS*, by
Karl Jellinek.

Leipzig: S. Hirzel, 1913.

J. Am. Chem. Soc. 36, 1060-1062 (May 1914).

Charles K. McGee

1889—1891

CONTRIBUTIONS
ORIGINALPUBLICATIONS
OTHER(In collaboration with John
W. Langley.)THE SUBAQUEOUS DISSOCIA-
TION OF CERTAIN SALTS.Science 2, 288-289 (Aug.
1883).

See J. W. Langley No. 2.

Clifford C. Meloche

1915—

CONTRIBUTIONS
ORIGINALPUBLICATIONS
OTHER

Contribution from the University of Wisconsin.

(In collaboration with Victor Lenher.)

The Influence of Lead on the Ferrocyanide Titration of Zinc.

Proc. Eighth International Congress of Applied Chemistry 1, 279-284 (Sept. 1912).

J. Am. Chem. Soc. 35, 134-138 (Feb. 1913).

Contribution from the University of Wisconsin.

The Derivatives of Perceric Oxide. (First Paper.)

J. Am. Chem. Soc. 37, 2338-2346 (Oct. 1915).

Contribution from the University of Wisconsin.

The Derivatives of Perceric Oxide. (Second Paper.)

J. Am. Chem. Soc. 37, 2645-2652 (Dec. 1915).

This and the preceding article bound together under one cover as a Doctor's Dissertation. University of Wisconsin, 1914.

Frederick G. Novy*

1887—1903

ORIGINAL
CONTRIBUTIONS

1. UNDER WHAT CONDITIONS IS COCAINE LIABLE TO CHANGE INTO AMORPHOUS ALKALOID?—IS HYGRINE A DEFINITE COMPOUND?
Proc. Mich. State Pharm. Assoc. 5, 167-170 (1887).
Pharm. Rundschau 5, 284-285 (Aug. 1887).
Pharm. Rundschau 5, 207-208 (Sept. 1887).
2. EINIGE HOEHERE HOMOLOGE DES COCAINS.
Pharm. Rundschau 5, 208-209 (Sept. 1887).
Proc. Am. Assoc. Adv. Science 36, 131-132 (1887).
Am. Chem. J. 10, 145-148 (Mar. 1888).
3. WHAT IS STENOCARPINE? (GLEDITSCHINE.)
Pharm. Rundschau 5, 248-250 (Nov. 1887).
Rep. Mich. State Board of Health (1887), p. 20-23

OTHER
PUBLICATIONS

RECENT PROGRESS IN CHEMISTRY.

Pharm. Era 1, 192-193 (May 1887).

WHAT IS ICE CREAM POISONING?

Pharm. Rundschau 5, 152-153 (July 1887).

ANALYSES OF TWO MANGANESE MINERAL WATERS.

J. Analytical Chem. 1, 385-387 (Oct. 1887).

Proc. Am. Assoc. Adv. Science 36, 131 (1887).

COCAINE AND ITS DERIVATIVES.

Detroit: George S. Davis, 1887. pp. viii + 98.

The Same. Second Edition with Appendix.

Detroit: George S. Davis, 1890. Now Pub. as part of "The Pharmacology of the Newer Materia Medica," p. 351-379 (Mar. 1890).

THE PROTEIDS OF THE URINE, WITH A COMPARISON OF THE TESTS FOR ALBUMIN.

Med. News 53, 293-297 (Sept. 1888).

THE HYGIENIC INSTITUTE AT BERLIN.

Pharm. Era 2, 426-427 (Nov. 1888).

* This bibliography of Dr. F. G. Novy includes only those titles bearing upon physiological chemistry between the years 1887 and 1903.

Frederick G. Novy

1887—1903

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS(In collaboration with V. C.
Vaughan.)PTOMAINES AND LEUCO-
MAINES, OR THE PUTREFACTIVE
AND PHYSIOLOGICAL ALKALOIDS.Philadelphia: Lea Bros. &
Co., 1888. pp. 316.

4. THE TOXIC PRODUCTS OF THE
BACILLUS OF HOG CHOLERA.
Med. News 57, 231-237
(Sept. 1890).

The Same. Second Edition.
Revised and Enlarged.(In collaboration with V. C.
Vaughan.)PTOMAINES, LEUCOMAINES,
AND BACTERIAL PROTEIDS. OR
THE CHEMICAL FACTORS IN THE
CAUSATION OF DISEASE.Philadelphia: Lea Bros. &
Co., 1891. pp. 391.(In collaboration with V. C.
Vaughan and C. T. Mc-
Clintock.)THE GERMICIDAL PROPERTIES
OF NUCLEINS. (1893.)

See V. C. Vaughan No. 14.

The Same. Third Edition.
Revised and Enlarged.(In collaboration with V. C.
Vaughan.)PTOMAINES, LEUCOMAINES,
TOXINS, AND ANTITOXINS: OR
THE CHEMICAL FACTORS IN THE
CAUSATION OF DISEASE.Philadelphia: Lea Bros. &
Co., 1896. pp. 604.

5. THE IMMUNIZING POWER OF
NUCLEOHISTON AND OF HIS-
TON.
J. Exp. Med. 1, 693-716
(1896).

Frederick G. Novy

1887—1903

ORIGINAL
CONTRIBUTIONS

6. NEUE APPARATE ZUM FIL-
TRIEREN UND ZUM STERILI-
SIEREN DURCH DAMPF.
Centr. Bakt. Parasitenk 22,
337-340 (1897).

7. (In collaboration with C. L.
Bliss.)
ACTION OF FORMALDEHYDE
ON ENZYMES AND ON CER-
TAIN PROTEIDS.
J. Exp. Med. 4, 47-80
(1899).

(In collaboration with P. C.
Freer.)

ON THE FORMATION, DE-
COMPOSITION AND GERMICI-
DAL ACTION OF BENZOYLACE-
TYL AND DIACETYL PEROX-
IDES. (Mar. 1902.)

See P. C. Freer No. 25.

(In collaboration with P. C.
Freer.)

ON THE ORGANIC PEROXIDES.
(A Chapter in "Contribu-
tions to Medical Research,"
dedicated to Dr. V. C.
Vaughan, 1903.)

See P. C. Freer No. 26.

OTHER
PUBLICATIONS

The Same. Fourth Edition.
Revised.

(In collaboration with V. C.
Vaughan.)

CELLULAR TOXINS, OR THE
CHEMICAL FACTORS IN THE
CAUSATION OF DISEASE.

Philadelphia and New York:
Lea Bros. & Co., 1902. pp. 495.

LABORATORY WORK IN URINE
ANALYSIS.

Ann Arbor: George Wahr,
1892. pp. 102.

The Same. Second Edition.
Revised and Enlarged.

LABORATORY WORK IN PHYSI-
OLOGICAL CHEMISTRY.

Ann Arbor: George Wahr,
1898. pp. 326.

CELL CHEMISTRY.

Intercollegiate Med. J. 2,
129-140 (Feb. 1898).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONS

1. SIMPLE APPARATUS FOR RAPID VAPORIZATION AT LIMITED HEAT, UNDER REDUCED PRESSURE, WITHOUT THE USE OF A PUMP.
Chem. News 20, 14-15 (Jan. 1870).

2. ON SULPHOPHENIC ACID.
Proc. Am. Pharm. Assoc. 19, 550-558 (1871).

OTHER
PUBLICATIONS

THE BLOW-PIPE ASSAY.
Eng. Mining J. 8, 360, 370 and 386 (Dec. 1869).

HYDRATE OF CHLORAL.
Mich. Univ. Med. J. 1, 51-54 (Mar. 1870).

PHARMACEUTICAL CHEMISTRY IN ITS RELATIONS TO MEDICAL PRACTICE.
Mich. Univ. Med. J. 1, 78-90 (Apr. 1870).

CAN UNCOMBINED IODINE BE OBTAINED IN SOLUTIONS, COLORLESS?

Mich. Univ. Med. J. 1, 153-155 (May 1870).

CHEMISTRY OF MUSCLE.
Mich. Univ. Med. J. 1, 327-336 (Aug. 1870).

PHARMACEUTICAL EDUCATION.

Proc. Am. Pharm. Assoc. 19, 425-429 (1871).

THE CONTAMINATION OF POTABLE WATERS BY LEAD AND ZINC.

Mich. Univ. Med. J. 2, 270-275 (July 1871).

THE CHEMICAL INDUSTRIES OF SCOTLAND AND ENGLAND. (A letter from London.)

Mich. Univ. Med. J. 3, 452-463 (Sept. 1872).

FRAGMENTS OF EARLY CHEMISTRY.

Mich. Univ. Med. J. 3, 617-621 (Dec. 1872).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONSANALYSIS OF GLACIAL PHOS-
PHORIC ACID OF COMMERCE.Proc. Am. Pharm. Assoc. 20,
259-260 (1872).(In collaboration with Silas
H. Douglas.)QUALITATIVE CHEMICAL
ANALYSIS. A Guide to the
Practical Study of Chemistry
and in the Work of Analysis.Ann Arbor, 1874. (Private-
ly printed by Tribune Printing
Co., Detroit. pp. 259.

3. QUALITATIVE SEPARATION
OF ARSENIC FROM ANTI-
MONY, TIN, COPPER, BIS-
MUTH AND MERCURY BY
TREATMENT OF THEIR SUL-
PHIDES WITH STRONG NI-
TRIC ACID. (With Victor
C. Vaughan.)
Am. Chemist 6, 41-42
(Aug. 1875).

ANALYTICAL AND PHARMA-
CEUTICAL NOTES: Purification
of Commercial Gutta Percha
(With George E. Willmarth);
Chemical and Microscopical
Examination of Cotton Root
Bark (With Wm. C. Staehle);
Assay of Samples of Opium
(With J. C. Moss); and Ex-
amination of Samples of Spir-
it of Nitrous Ether (With
Oakley Griggs).

Am. J. Pharm. 47, 454-463
(Oct. 1875).

4. COMPARATIVE DETERMINA-
TIONS OF THE SOLUBILITIES
OF ALKALOIDS IN CRYSTAL-
LINE, AMORPHOUS, AND
NASCENT CONDITIONS.
Am. Chemist 6, 84-85
(Sept. 1875).
Proc. Am. Assoc. Adv.
Science 24, 114-117 (1875).

ANALYTICAL AND PHARMA-
CEUTICAL NOTES: Examination
of the Third Alkaloid in Hy-
drastis Canadensis (With
John C. Burt); Proportion of
Morphia in Winslow's Sooth-
ing Syrup (With J. H. Salls);
Examination of Deposits from
Certain Fluid Extracts (With
C. S. Johnson).

Am. J. Pharm. 47, 481-484
(Nov. 1875).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

OUTLINES OF PROXIMATE ORGANIC ANALYSIS FOR THE IDENTIFICATION, SEPARATION AND QUANTITATIVE DETERMINATION OF THE MORE COMMONLY OCCURRING ORGANIC COMPOUNDS.

New York: D. Van Nostrand, 1875. pp. 192.

Reprinted 1877, 1882 and 1894 as of Successive Editions. Now out of print.

CHEMICAL EXAMINATION OF ALCOHOLIC LIQUORS. A Manual of the Constituents of the Distilled Spirits and Fermented Liquors of Commerce, and Their Qualitative and Quantitative Determination.

New York: D. Van Nostrand, 1875. pp. 108.

Second Edition 1880. (A reprinting. Now out of print.

ANALYTICAL AND PHARMACEUTICAL NOTES: The Preparation of Potassium Ferricyanide from Potassium Ferrocyanide (With J. L. Leist); Examination of Ten Samples of Sugar and Ten of Syrup (With H. A. Tremain); Examination of Commercial Mineral Acids (With O. B. Dickinson); Analyses of Bismuth Subnitrate and Subcarbonate and also of Metallic Bismuth (With N. G. O. Coad); Examination of Four Samples of Milk (With N. G. O. Coad).

Am. Chemist 6, 42-45 (Aug. 1875).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONSTHE AROMATIC GROUP IN
THE CHEMISTRY OF PLANTS.Proc. Ann Arbor Scientific
Assoc. 1, 49-69 (1875).Pharm. J. and Trans. (3) 7,
144-146 and 164-166 and 182-
183 (Aug. 1876).(In collaboration with Silas
H. Douglas.)QUALITATIVE CHEMICAL
ANALYSIS.(Second Edition, revised.)
New York: D. Van Nostrand,
1876. pp. 254.ANALYTICAL AND PHARMA-
CEUTICAL NOTES: Analysis of
Fifteen Samples of Tea (With
J. T. Clark); Examination of
Coffee (With Chas. H. Eddy);
Analysis of Nine Samples of
Distilled Spirits (With M. U.
Green); Analysis of Wines
(With Chas. A. Dingley);
Examination of Ten Specimens
of Cider (With Louis C.
Fuller); Analysis of Five
Samples of Chrome Green of
Commerce (With S. E. Allen);
Examination of Twenty-
four Specimens of Kerosene
Oil (With W. J. Whitlark).Am. Chemist 7, 44-48 (Aug.
1876).

A. B. Prescott
1865—1905

ORIGINAL
CONTRIBUTIONS

OTHER
PUBLICATIONS

ANALYTICAL AND PHARMACEUTICAL NOTES: Preparation of Liquor Ferri Nitratis (With F. T. Bower); Comparison of Four Processes for Morphimetric Assay of Opium (With James Lynn); Valuation of Powdered Ipecacuanha Root and Dover's Powder (With T. M. Stewart).

Am. J. Pharm. 48, 356-360 (Aug. 1876).

Also in Peninsular J. Medicine (n.s.) 1, 528-529 (Aug. 1876).

ANALYTICAL AND PHARMACEUTICAL NOTES: Examination of the Resinoids,—Podophyllin, Cimicifugin, and Hydrastin (With L. F. Beach); Examination of the Resinoids,—Sanguinarin, Leptandrin and Aconitin (With J. R. Little); Analysis of Eleven Specimens of the Native Sulphide of Antimony (With Wm. C. Sheffield); Valuation of Eight Samples of Precipitated Sulphur (With C. W. L. Dietrich); Analysis of Six Nostriums Sold as Ague Cures (With O. L. Churchill).

Am. J. Pharm. 48, 385-392 (Sept. 1876).

Also in Peninsular J. Medicine (n.s.) 1, 683-687 (Oct. 1876).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONSNOTE ON FROEHDE'S REAGENT
AS A TEST FOR MORPHIA.Am. J. Pharm. 48, 59-64
(Feb. 1876).ANALYTICAL AND PHARMA-
CEUTICAL NOTES: Precipitations
by the Phosphoric Acids
(With J. R. Morgan).Am. J. Pharm. 48, 534-538
(Dec. 1876).THE MATERIAL RESOURCES
OF LIFE.Pop. Sci. Monthly 11, 339-
349 (July 1877).ANALYTICAL AND PHARMA-
CEUTICAL NOTES: Determina-
tion of Quinia by Means of
Potassium Mercuric Iodide
and also by Means of Phos-
phomolybdic Acid (With J. J.
Johnston and A. S. Lobb);
Examination and Study of
Commercial Citrate of Iron
and Quinia (With W. J. Hol-
loway); Examination of Sug-
ars and Syrups (With J. S.
Johnson and S. E. Parkhill);
A Study of Husemann's Test
for Morphia (With H. S.
Wyman); Examination of
Ground Coffee and Coffee Ex-
tract (With Miss M. E. John-
son); Examination of Pro-
prietary Remedies for Asthma
and Catarrh, Butter Powders
and Other Nostrums (With
W. S. Gates).Am. J. Pharm. 49, 481-495
(Oct. 1877).

5. THE ACTION OF HYDRO-
CHLORIC ACID ON THE MET-
ALLIC SULPHATES. (With
A. L. Young and G. F.
Dixon.)

Chem. News 36, 178-179
(Oct. 1877).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONS

6. MORPHIOMETRIC PROCESSES FOR OPIUM. (With Henry Stecher.)
Proc. Am. Pharm. Assoc. 26, 807-823 (1878).
Pharm. J. and Trans. 10, 128-130 and 182-185 (1870).
In part in New Remedies 8, 69-71 and 103-107 (1879).
7. THE VALUATION OF TINCTURE OF OPIUM. (With Henry Heim.)
Proc. Am. Pharm. Assoc. 26, 823-826 (1878).
Pharm. J. and Trans. 10, 66-67 (July 1879).
Appears, in part, in New Remedies 8, 39-40 (Feb. 1879).

OTHER
PUBLICATIONS

FORMATION OF CRYSTALS OF CALCIUM OXALATE IN THE URINE AFTER ITS DISCHARGE. (With Miss M. E. Post.)

Chem. News 37, 76 (Feb. 1878).

TESTS OF THE SERVICE OF A DOMESTIC WATER FILTER. (With E. M. Reed and Theo. Hauch.)

Chem. News 37, 107-108 (Mar. 1878).

Mich. Med. News 1, 157-158 (Aug. 1878).

THE CHEMISTRY OF FRUIT RIPENING.

Trans. Mich. Pomological Society 7, 149-159 (1877).

Pop. Sci. Monthly 12, 460-473 (Feb. 1878).

ANALYTICAL AND PHARMACEUTICAL NOTES: Valuation of Dover's Powder (With C. W. Heister); Analysis of Wahoo Bark (With J. J. Miller); Analysis of Oxytropis Lamberti (With Miss C. M. Watson); Analysis of The Cranberry (With L. W. Moody); Analysis of Magnesium Carbonate Samples (With R. H. Wallace).

Am. J. Pharm. 50, 551-568 (Dec. 1878).

TRIAL OF SEVERAL METHODS FOR THE EXTRACTION OF GLYCERIN FROM MIXTURES CONTAINING GLUCOSE AND SUCROSE. (With O. H. Koehnle.)

New Remedies 7, 354-355 (Dec. 1878).

A. B. Prescott .

1865—1905

ORIGINAL
CONTRIBUTIONS

8. TRIAL OF VARIOUS SCHEMES
FOR THE SEPARATION AND
QUANTITATIVE ESTIMATION
OF QUINIA, QUINIDIA, CIN-
CHONIA AND CINCHONIDIA.
(With Hugo Thum.)
Proc. Am. Pharm. Assoc.
26, 828-838 (1878).

OTHER
PUBLICATIONS

PURIFICATION OF STRYCHNIA
FROM BRUCIA. (With A. D
Smith.)

Proc. Am. Pharm. Assoc. 26,
806-807 (1878).

CAUSTIC ALCOHOL.

New Preparations 3, 1-2
(Jan. 1879).

CONTROL OF CHEMICAL OPER-
ATIONS IN THE STOMACH.

Physician and Surgeon 1,
2-5 (Jan. 1879).

CHEMICAL AND MICROSCOPI-
CAL ANALYSIS OF THE BARK OF
RHAMNUS PURSHIANA.

New Preparations 3, 27-28
(Feb. 1879).

Am. J. Pharm. 51, 165-168
(Apr. 1879).

THYMOL.

New Preparations 3, 54-55
(Mar. 1879).

EARTH-WAX AND PARAFFINE.

New Preparations 3, 79-80
(Apr. 1879).

CONCERNING THE DESIRABIL-
ITY OF LEGAL MEASURES TO
PREVENT ADULTERATION OF
FOOD AND MEDICINE. (A let-
ter.)

New Remedies 8, 152 (May
1879).

INCOMPATIBILITIES.

Physician and Surgeon 1,
203-205 (May 1879).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

CHEMICAL RECREATIONS.

New Preparations 3, 105-106
and 161-162 (1879).

(Review of) THE NATIONAL
DISPENSATORY, by Alfred Stille
and John M. Maisch.

Phila.: H. C. Lea, 1879.

Physician and Surgeon 1,
515-517 (Nov. 1879).

FIRST BOOK IN QUALITATIVE
CHEMISTRY.

New York: D. Van Nos-
trand Co., 1879. pp. 160.

Reprinted 1880, 1883, 1886,
1888, 1890, 1892, 1893, 1895 and
1900 as of Successive Editions.
The next, or eleventh edition,
entirely rewritten appeared in
1902.

ALKALOIDS OF THE BERBERIDA-
CEÆ.

New Preparations 3, 219-220
(Sept. 1879).

Pharm. J. and Trans. 10, 404
(Nov. 1879).

9. COMPOSITION OF ALKALINE
SOLUTIONS OF ALUMINIUM,
ZINC AND SILVER.
J. Am. Chem. Soc. 2, 27-
33 (Jan. 1880).

CONSTITUENTS OF PROPRIETARY
REMEDIES FOR RHEUMA-
TISM.

Physician and Surgeon 2,
97-100 (Mar. 1880).

PHARMACOPOEIAL ASSAY
METHODS FOR CINCHONA BARK
AND TESTS FOR CINCHONA
ALKALOIDS.

New Remedies 9, 72-73 and
106-107 (1880).

In "Report on Revision of
U. S. Pharmacopoeia."

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

ANALYTICAL AND PHARMACEUTICAL NOTES: Analyses of Flour and Wheat (With S. J. Heimbach); Analysis of Vinegar (With J. P. Kelly); Examination of Sugar for Metals (With A. L. Walker); Estimation of Nicotia in Tobacco (With E. T. Pease); Estimation of Arsenic in Wall Paper and Cambric (With A. S. Parker); Examination of Pickles for Copper (With E. Hawley).

J. Am. Chem. Soc. 2, 333-340 (July 1880).

COFFEE IN COMPARISON WITH TEA.

Physician and Surgeon 2, 337-343 (Aug. 1880).

MORPHIOMETRIC METHODS WITH OPIUM. (With Joseph F. Geisler.)

New Remedies 9, 356-358 (Dec. 1880).

10. ESTIMATION OF ALKALOIDS BY POTASSIUM MERCURIC IODIDE.

Am. Chem. J. 2, 294-304 (Nov. 1880).

POISONS: THEIR EFFECTS AND ANTIDOTES.

(A chapter in Wood's Household Practice of Medicine. Edited by F. A. Castle. New York: Wm. Wood and Co., 1880, (Vol. 1, p. 771-819).

THE USE OF HOUSEHOLD FILTERS FOR POTABLE WATERS.

Ann. Report Mich. State Board of Health, 1880, p. 61-69.

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONS

OTHER
PUBLICATIONS

(In collaboration with Silas H. Douglas.)

QUALITATIVE CHEMICAL ANALYSIS. Third Edition. Revised by A. B. Prescott. With a study of Oxidation and Reduction, by Otis Coe Johnson, New York: D. Van Nostrand Co., 1880, pp. 305.

NOSTRUMS IN THEIR RELATIONS TO THE PUBLIC HEALTH. Ann. Report Mich. State Board of Health, 1881, p. 150-16c.

Physician and Surgeon 3, 213-225 (May 1881).

EXTRACTS OF MALT.

Physician and Surgeon 3, 548-553 (Dec. 1881).

THE CHEMISTRY OF COFFEE AND TEA.

Pop. Sci. Monthly 20, 359-369 (Jan. 1882).

FOOD ADULTERATIONS.

Ann. Report Mich. State Board of Health, 1882, p. 203-208.

A FEW NOSTRUMS.

Physician and Surgeon 4, 245-246 and 287 and 410 (1882).

REPORT ON THE PUBLIC WATER SUPPLY OF DETROIT. (With Th. J. Wrampelmeier.)

Ann. Report Board of Health of Detroit, 1882, p. 231. 1893.

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONS

OTHER
PUBLICATIONS

TIN IN CANNED FRUITS.

The Sanitary Engineer 6,
515 (Nov. 1882).

THE LIMITS AND THE TESTS
OF OUR MEDICINAL STANDARDS.

Therapeutic Gazette 7, 49-51
(Feb. 1883).

EXTRACT OF MALT, ITS PLACE
AS A FOOD AND A REMEDY.

Pharmacist and Chemist 16,
53 (1883).

OPIUM STRENGTH BY THE
NEW PHARMACOPOEIA.

Physician and Surgeon 5,
65-67 (Feb. 1883).

ON THE QUALITY OF COM-
MERCIAL IODIDE OF POTASSIUM.

Am. J. Pharm. 55, 497-506
(Oct. 1883).

Proc. Am. Pharm. Assoc. 31,
367-374 (1883).

ON THE STRENGTH OF OPIUM
AND ITS PREPARATIONS IN THIS
COUNTRY AS COMPARED WITH
THE STANDARDS OF THE PHAR-
MACOPOEIAS OF 1870 AND 1880.

Proc. Mich. State Pharm.
Assoc. 1, 48-55 (1883).

(In collaboration with J. W.
Baird.)

A DICTIONARY OF THE AC-
TION OF HEAT UPON CERTAIN
METALLIC SALTS.

J. Am. Chem. Soc. 5, 135-
196 (1883).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONS

OTHER
PUBLICATIONS

PROPRIETARY MEDICINES IN
THE FUTURE.

Drug Circ. 28, 98-99 (July
1884).

WHY SHOULD DRUGGISTS
USE THE PHARMACOPOEIA?

Proc. Mich. State Phar. As-
soc. 2, 99-103 (1884).

THE DIASTATIC POWER OF
CERTAIN EXTRACTS OF MALT.

Am. J. Pharm. 57, 126-127
(Mar. 1885).

REQUIREMENTS FOR ENTERING
THE SCHOOL OF PHARMACY AT
THE UNIVERSITY OF MICHIGAN.
(A letter.)

Am. J. Pharm. 57, 156-157
(Mar. 1885).

SHOULD PROPRIETARY MED-
ICINES BE REQUIRED TO GIVE
AN ACCOUNT OF CONTENTS?

Trans. Mich. State Med.
Soc. 9, 153-158 (1885).

Physician and Surgeon 7,
536-540 (Dec. 1885).

See also Committee Report
on the Necessary Legislation.

Proc. Am. Pharm. Assoc. 33,
394-396 (1885).

THE ARTIFICIAL PRODUCTION
OF QUININE.

Phar. Review 6, 138 (May
1886).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONS

OTHER
PUBLICATIONS

HENRY BETTS PARSONS. A memorial address delivered before Alumni Association. School of Pharmacy, University of Michigan.

Privately printed by Wm. Graham, Printer, Detroit, 1885, pp. 16.

CONTROL ANALYSES AND LIMITS OF RECOVERY IN CHEMICAL SEPARATION.

Proc. Am. Assoc. Adv. Science 34, 109-117 (1885).

Chem. News 53, 78-79 and 88-90 (Feb. 1886).

STRENGTH OF TINCTURE OF IODINE AND ITS PHARMACOPOEIAL STANDARD.

Proc. Mich. State Pharm. Assoc. 3, 152-155 (1885).

THE LITERATURE OF PHARMACY.

Western Druggist 8, 71-73 and 113-115 (1886).

REPORT OF ANALYSIS OF BAY CITY WATERS, OCTOBER TO DECEMBER 1885.

Fourteenth Ann. Report, Sup't Bay City Water Works (1886).

OUTLINE OF A PLAN OF STUDY FOR THE ASSISTANT IN PHARMACY.

Proc. Mich. State Pharm. Assoc. 4, 113-126 (1886).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONS

OTHER
PUBLICATIONS

THE ESTIMATION OF NITRATES IN POTABLE WATERS.

Pharm. Era 1, 99-101 (Apr. 1887).

THE CHEMISTRY OF NITROGEN AS DISCLOSED IN THE CONSTITUTION OF THE ALKALOIDS. (An Address.)

Proc. Am. Assoc. Adv. Science 36, 103-119 (1887).

J. Am. Chem. Soc. 9, 128-145 (1887).

POSITIVE AND NEGATIVE UNITS OF VALENCE.

Proc. Am. Assoc. Adv. Science 36, 130-131 (1887).

ORGANIC ANALYSIS: A Manual of the Descriptive and Analytical Chemistry of Certain Carbon Compounds in Common Use.

New York: D. Van Nostrand & Co., 1887, pp. 533.

Reprinted 1889, 1892, 1895, 1901 and 1909 as of successive editions; the last therefore the "Sixth," pp. 533.

(In collaboration with Erwin E. Ewell.)

ARTIFICIAL SALICYLIC ACID.

Proc. Am. Pharm. Assoc. 36, 78-83 (1888).

II. ESTIMATION OF BROMINE IN PRESENCE OF CHLORINE.. (With W. L. Dunn.)

J. Analytical Chem. 3, 373-378 (Oct. 1889).

Proc. Am. Assoc. Adv. Science 38, 173-176 (1889).

THE ORGANIZATION OF A NATIONAL CHEMICAL SOCIETY. (A Committee Report.)

Proc. Am. Assoc. Adv. Science 38, 35-38 1889).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

AN INDEX OF CONTRIBUTIONS
FROM THE MICHIGAN STATE
PHARMACEUTICAL ASSOCIATION
AND THE SCHOOL OF PHARMACY
OF THE UNIVERSITY OF MICH-
IGAN.

For Reference in the Revi-
sion of the Pharmacopoeia,
1883, Ann Arbor: Courier
Print, 1890, pp. 12.

See University of Michigan
Contributions, Vol. 17, No. 3.

THE USES OF BOOKS IN EX-
PERIMENTAL SCIENCE.

Univ. of Mich. Inlander 2,
37-41 (Oct. 1891).

REVIEW OF THE CONTRI-
BUTIONS OF THE SCHOOL OF
PHARMACY OF THE UNIVERSITY
OF MICHIGAN FOR THE YEAR
1890-1891.

Proc. Mich. State Pharm.
Assoc. 9, 23-27 (1891).

A similar report for the year
1891-92.

Proc. Mich. State Pharm.
Assoc. 10, 56-61 (1892).

THE IMMEDIATE WORK IN
CHEMICAL SCIENCE. (Address
of Retiring President of the
A. A. S., Rochester, Aug.
17, 1892.

Proc. Am. Assoc. Adv. Sci-
ence 41, 1-14 (1892).

J. Am. Chem. Soc. 14, 190-
204 (1892).

Science (n.s.) 20, 127-131
(Sept. 1892).

12. NOTE ON THE RECOVERY OF
ARSENIC.
J. Am. Chem. Soc. 14, 223-
225 (1892).

13. THE IODOMERCURATES OF
ORGANIC BASES.
Am. Chem. J. 14, 606-611
(Dec. 1892).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

QUALITATIVE CHEMICAL ANALYSIS. (With Otis Coe Johnson as joint author.) Fourth Edition. Revised from former text by Douglas and Prescott. New York: D. Van Nostrand & Co., 1892, pp. 317.

CAFFEINE AND THE QUESTION OF ITS ISOMERISM.

J. Am. Med. Assoc. 20, 90-94 (Jan. 1893).

CERTAIN DISTINCTIVE ADVANCES IN THE ANALYTICAL CHEMISTRY OF RECENT YEARS.

Address before World's Congress of Chemists, Chicago 1893.

J. Am. Chem. Soc. 15, 376-379 (1893).

PHARMACY IN GERMANY.

Proc. Mich. State Pharm. Assoc. 12, 90-92 (Sept. 1894).

EDWARD DEMILLE CAMPBELL.

Mich. Technic 7, 11-15 (1894).

NOTE ON THE HISTORY OF "MAYER'S SOLUTION."

Pharm. Rundschau 12, 146 (June 1894).

CLOSING ADDRESS DELIVERED BEFORE THE WORLD'S CONGRESS OF CHEMISTS, CHICAGO, 1893.

I. Am. Chem. Soc. 16, 867-869 (Dec. 1894).

14. PERIODIDES OF PYRIDINE. (With P. F. Trowbridge.) J. Am. Chem. Soc. 17, 859-869 (Nov. 1895).

THE PROFESSIONAL SITUATION IN PHARMACY.

Pharm. Era 13, 132-135 (Jan. 1895).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONS

15. (In collaboration with R. F. Flintermann.)
DIPYRIDINE TRIMETHYLENE
DIBROMIDE, AND A STUDY
OF CERTAIN ADDITIVE RE-
ACTIONS OF ORGANIC BASES.
J. Am. Chem. Soc. 18, 28-
35 (Jan. 1896).
16. NOTES ON A FEW PYRIDINE
ALKYL IODIDES.
J. Am. Chem. Soc. 18, 91-
96 (Jan. 1896).
17. PYRIDINE ALKYL HYDROX-
IDES. (With S. H. Baer.)
J. Am. Chem. Soc. 18, 247-
257 (Mar. 1896).
18. (In collaboration with S.
H. Baer.)
DIPYRIDINE METHYLENE
IODIDE AND THE NON-FOR-
MATION OF THE CORRES-
PONDING MONOPYRIDINE
PRODUCTS.
J. Am. Chem. Soc. 18, 988-
989 (Nov. 1896).

OTHER
PUBLICATIONS

PERCENTAGE IN SURGICAL
DRESSINGS. (A Note.)
Am. Druggist 26, 305 (1895).

NOTES UPON SOME PHILLIP-
INE ISLAND DRUGS UNDER
ANALYSIS FOR ALKALOIDS.
(With E. Mallet and F. M.
Marsh.)

Proc. Am. Pharm. Assoc. 43,
241-244 (1895).

INDICATORS IN THE ALKALI-
METRY OF ALKALOIDS.

Proc. Am. Pharm. Assoc. 43,
187-188 (1895).

THE PERIODIDES.

J. Am. Chem. Soc. 17, 775-
781 (Oct. 1895).

Pharm. Rundschau 13, 233-
234 (Oct. 1895).

OBITUARY OF PROFESSOR
PETER COLLIER.

Am. J. Science 152, 246
(Sept. 1896).

THE FUNCTION OF PHAR-
MACY IN THE SOCIAL BODY; ITS
RESPONSIBILITIES TO THE PUB-
LIC AND THE PHYSICIAN. (An
Address.)

Pharm. Review 14, 159-161
(July 1896).

Pharm. Erz. 16, 7-9 and 37-
41 (July 1896).

Bull. Pharm. 10, 358-364
(Aug. 1896).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONS

19. (In collaboration with J. W. T. Knox.)
THE CAFFEIN COMPOUND
IN KOLA. (Part I.)
Proc. Am. Pharm. Assoc.
44, 136-160 (1896).
J. Am. Chem. Soc. 19, 63-
90 (Jan. 1897).

20. THE PERIODIDES OF THE
ALKALOIDS, AS MOLECULAR
FORMS FOR VOLUMETRIC OR
GRAVIMETRIC ESTIMATION.
(First Paper.)
Pharm. Review 14, 123-
130 and 148-153 and 172-
177 (1896).

21. ALKYL BISMUTH IODIDES
AND BISMUTH IODIDES OF
VEGETABLE BASES.
Proc. Am. Pharm. Assoc.
45, 208-211 (1897).
Pharm. Review 15, 219-
220 (Nov. 1897).
J. Am. Chem. Soc. 20, 96-
100 (Feb. 1898).

22. (In collaboration with J. W. T. Knox.)
THE CAFFEIN COMPOUND
IN KOLA. Part II. KOLA-
TANNIN.
Pharm. Review 15, 172-176
and 191-195 and 214-219
(1897).
J. Am. Chem. Soc. 20, 34-
78 (Jan. 1898).

OTHER
PUBLICATIONS

REPORT OF THE SPECIAL COM-
MITTEE ON RESEARCH.

Proc. Am. Pharm. Assoc. 44,
128-131 (1896).

Proc. Am. Pharm. Assoc.
45, 172-174 (1897).

PHARMACEUTICAL EDUCA-
TION.

Pharm. Era 16, 854-857 (Dec.
1896).

THE CHEMICAL LABORATOR-
IES OF GERMANY.

Am. Druggist 28, 187-190
(Mar. 1896).

ON PROVISIONS OF A POISON
LAW AND MEASURES FOR ITS
ENFORCEMENT.

Proc. Am. Pharm. Assoc.
45, 281-282 (1897).

THE THERAPEUTICAL ECO-
NOMICS OF OPEN COMPOSITION.

J. Am. Med. Assoc. 31, 891-
892 (1898).

FRUIT ACIDS.

Twenty-eighth Annual Re-
port, Mich. State Horticultural
Society, 1898, p. 152-156.

HISTORY OF THE CHEMICAL
LABORATORY OF THE UNIVER-
SITY OF MICHIGAN.

Mich. Alumnus 5, 10-12
(Oct. 1898).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONS

23. (In collaboration with H. M. Gordin.)
ATROPINE PERIODIDES AND IODOMERCURATES.
J. Am. Chem. Soc. 20, 329-338 (May 1898).
Am. J. Pharm. 70, 294-303 (June 1898).
24. (In collaboration with H. M. Gordin.)
A VOLUMETRIC ASSAY OF OPIUM.
Pharm. Archives 1, 121-126 (June 1898).
Note in Pharm. Review 16, 303 (1898) and Am. J. Pharm. 72, 297 (June 1900).
25. CERTAIN ALKALOIDAL PERIODIDES AND THE VOLUMETRIC ESTIMATION OF ALKALOIDS AS HIGHER PERIODIDES. (With H. M. Gordin.)
Proc. Am. Pharm. Assoc. 46, 355-373 (1898).
J. Am. Chem. Soc. 20, 706-728 (Sept. 1898).
Am. J. Pharm. 70, 439-442 (Sept. 1898).
26. (In collaboration with H. M. Gordin.)
EMETINE OCTOIDE AND THE EXTRACTION AND ESTIMATION OF ALKALOIDS GENERALLY.
J. Am. Chem. Soc. 21, 231-239 (Mar. 1899).

OTHER
PUBLICATIONS

(In collaboration with Paul I. Murrill as joint author.)

ALKALOIDAL ESTIMATION; a Bibliographical Index.

Privately printed, Ann Arbor, 1898, Inland Press, pp. 58.

See Univ. of Mich. Contributions 17, No. 6.

(Review of) ELEMENTS OF GENERAL CHEMISTRY WITH EXPERIMENTS, by John H. Long. Chicago: E. H. Colegrove, 1898.

J. Am. Chem. Soc. 21, 103-105 (Jan. 1899).

THE CHEMICAL COMPOSITION OF BUTTER FAT IN DISTINCTION FROM FATS OF MEATS AND OF SEEDS.

Ann. Report of Dairy and Food Commissioner of the State of Michigan, 1899.

(Ref. in Proc. Mich. Acad. Science, 1898.)

THE RELATIVE MERITS OF GRAHAM AND PATENT FLOURS.

Reports Mich. State Millers' Convention (1899) p. 12-15.

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONS

OTHER
PUBLICATIONS

27. (In collaboration with William H. Hess.)
COUMARIN AND VANILLIN:
THEIR SEPARATION, ESTI-
MATION AND IDENTIFICA-
TION IN COMMERCIAL FLAV-
ORING EXTRACTS.
Pharm. Review 17, 7-9
(Jan. 1899).
J. Am. Chem. Soc. 21, 256-
259 (Mar. 1899).
28. (In collaboration with H. M. Gordin.)
HYDRASTINE HEXAIODIDE,
AND ASSAY OF HYDRASTIS
CANADENSIS BY MEANS OF
STANDARD IODINE FOR HY-
DRASTINE AND OF STANDARD
POTASSIUM IODIDE FOR BER-
BERINE.
Am. J. Pharm. 71, 257-266
(June 1899).
J. Am. Chem. Soc. 21, 732-
741 (Sept. 1899).
29. (In collaboration with H. M. Gordin.)
THE ASSAY OF OPIUM; a
Supplementary Note.
Pharm. Review 17, 244-249
(June 1899).
30. (In collaboration with H. M. Gordin.)
DIRECTIONS FOR CERTAIN
ALKALOIDAL ASSAYS.
Pharm. Archives 2, 318-
327 (Oct. 1899).
Appears in part in Proc.
Am. Pharm. Assoc. 47, 271-
280 (1899).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

31. (In collaboration with H. M. Gordin.)

A SIMPLE ALKALIMETRIC
METHOD OF ESTIMATION OF
SALT-FORMING ALKALOIDS
USING PHENOLPHTHALEIN
AS INDICATOR.

Pharm. Review 17, 495-496
(Nov. 1899).

32. (In collaboration with H. M. Gordin.)

FURTHER WORK UPON THE
ESTIMATION OF ALKALOIDS
AND THE ASSAY OF ALKA-
LOIDAL DRUGS.

Am. J. Pharm. 71, 514-525
(Nov. 1899).

Proc. Am. Pharm. Assoc.
47, 261-271 (1899).

Pharm. J. Trans. (4) 10,
5-8 (Jan. 1900).

ANTIDOTES IN CASES OF MOR-
PHINE POISONING.

Proc. Mich. State Pharm.
Assoc. 18, 43-48 (1900).

THE PRESIDENTIAL ADDRESS
BEFORE AMERICAN PHARMACEU-
TICAL ASSOCIATION, Richmond,
Va., 1900.

Proc. Am. Pharm. Assoc. 48,
5-11 (1900).

33. (In collaboration with H. M. Gordin.)

FINE NEUE METHODE DEN
MORPHINGEHALT DES OP-
IUMS ZU BESTIMMEN.

Arch. Pharm. 237, 380-384
(1899).

34. (In collaboration with H. M. Gordin.)

EXTRACTION AND ESTIMA-
TION OF COLCHICINE.

Am. J. Pharm. 72, 297
(June 1900).

Proc. Am. Pharm. Assoc.
48, 133-138 (1900).

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONS

35. (In collaboration with H. M. Gordin.)
SHORT DIRECTIONS FOR THE
ASSAY OF OPIUM.
Proc. Am. Pharm. Assoc.
48, 126-128 (1900).

36. SCOPOLA VERSUS BELLADON-
NA. (With J. O. Schlotter-
beck.)
Bull. Pharm. 16, 55-58
(Feb. 1902).

OTHER
PUBLICATIONS

QUALITATIVE CHEMICAL
ANALYSIS. (With Otis Coe
Johnson.) Fifth Edition. Re-
vised. New York: D. Van Nos-
trand & Co., 1901, pp. xi + 420.

THE DETECTION OF METHYL
ALCOHOL IN PRESENCE OF
ETHYL ALCOHOL.

Pharm. Arch. 4, 86-90 (May
1901).

Proc. Mich. State Pharm.
Assoc. 21, 37-39 (1903).

SILAS H. DOUGLAS, THE
FOUNDER OF THE CHEMICAL
LABORATORY OF THE UNIVERSITY
OF MICHIGAN.

Mich. Alumnus 9, 1-6 (Oct.
1902).

FIRST BOOK IN QUALITATIVE
ANALYSIS. (With Eugene C.
Sullivan.) Eleventh Edition
of former work by Senior
author. New York: D. Van
Nostrand & Co., 1902, pp. 148.

(Review of) A TEXT BOOK
OF ORGANIC CHEMISTRY, by W.
A. Noyes. New York: Henry
Holt & Co., 1903.

J. Am. Chem. Soc. 25, 774-
776 (July 1903).

SILAS H. DOUGLAS AS PRO-
FESSOR OF CHEMISTRY AND
PHARMACY.

Pharm. Review 21, 359-363
(Sept. 1903).

Partly reprinted under the
heading "The Teaching of
Chemistry and Pharmacy as

A. B. Prescott

1865—1905

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

Related Subjects in Colleges of Medicine at the Middle of the last Century."

Proc. Am. Pharm. Assoc. 51, 547-548 (1903).

THE ROLE OF CARBON.

Proc. Am. Philosoph. Soc. 43, 102-104 (Apr. 1904).

(Review of) THE VEGETABLE ALKALOIDS WITH PARTICULAR REFERENCE TO THEIR CHEMICAL CONSTITUTION, by Amé Pictet (Trans. by H. C. Biddle) New York: John Wiley & Sons, 1904.

J. Am. Chem. Soc. 26, 882-883 (July 1904).

THE ALKALOIDS IN TOXICOLOGY. (A chapter appearing in "A Text Book of Legal Medicine and Toxicology," by Frederick Peterson and Walter S. Haynes, Philadelphia: W. B. Saunders & Co., 1904, vol. 2, p. 446-531.

THE EDUCATIONAL QUALIFICATION (for Admission to Schools of Pharmacy and for the Practice of Pharmacy under State Law).

Proc. Mich. State Pharm. Assoc. 22, 50-52 (1904).

Am. J. Pharm. 76, 420-423 (Sept. 1904).

CONTRIBUTIONS TO THE UNITED STATES PHARMACOPOEIA. Sixth Revision, 1883, and Seventh Revision, 1894, as member of Committee on revision.

P. B. Rose
1868—1875

ORIGINAL
CONTRIBUTIONS

1. THE INFLUENCE OF EXCESSIVE AND PROLONGED MUSCULAR EXERCISE UPON THE ELIMINATION OF EFFETE MATTERS BY THE KIDNEYS. Mich. Univ. Med. J. 1, 541-551 (Oct. 1870).
2. PHYSIOLOGY OF THE URINE. Mich. Univ. Med. J. 1, 641-650 and 705-716 (1871).

OTHER
PUBLICATIONS

PERMANGANATE OF POTASSA IN OXALURIA.

Mich. Univ. Med. J. 1, 147-150 (May 1870).

THE ANTAGONISTIC ACTION OF ATROPIA TO MORPHIA.

Mich. Univ. Med. J. 2, 652-653 (Jan. 1872).

John D. Rue

1913—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONSTHE SCIENTIFIC STUDY OF
PAPER MAKING.(Description of courses in
paper manufacture at the
University of Michigan.)Paper 16 (No. 16) 11-12
(June 1915).World's Paper Trade Rev.
64, No. 4, 129-130 (July 1915).Pulp Paper Mag. Can. 13,
389 (1915).

J. O. Schlotterbeck

1892—

ORIGINAL
CONTRIBUTIONS

1. NOTES ON THE BEHAVIOR OF ALBUMINATE OF IRON AND FERRATIN WITH ARTIFICIAL GASTRIC JUICE. (With S. R. Boyce.)
Proc. Am. Pharm. Assoc. 42, 206-210 (1894).

2. (In collaboration with J. W. T. Knox.)
ANALYSIS OF KOLA.
Proc. Am. Pharm. Assoc. 43, 334-338 (1895).

3. (During Leave of Absence.)
BEITRAEGE ZUR ENTWICKLUNGSGESCHICHTE PHARMAKOGNOSTISCH WICHTIGER SAMEN.

Inaugural Dissertation,
University of Berne, 1896.

4. COMPARATIVE STRUCTURE OF THE LEAVES OF DATURA STRAMONIUM, ATROPA BEL-
LADONNA AND HYOSCYAMUS NIGER. (With A. Van Zwaluwenburg.)
Proc. Am. Pharm. Assoc. 45, 202-208 (1897).
Pharm. Archives 1, 1-5 (Jan 1898).

OTHER
PUBLICATIONS

The Causes of Variation in Color of Tincture of Opium.

Proc. Mich. Pharm. Assoc. 5, 133-137 (1887).

THE PHARMACOGNOSY OF KOLA. (A chapter of 42 pp. in an illustrated monograph "Kola.") Detroit: Frederick Stearns & Co., 1894.

PHARMACEUTICAL EDUCATION IN GERMANY.

Pharm. Era 16, 872-877 (Dec. 1896).

PHARMACOGNOSY: ITS SCOPE AND THE METHODS OF TEACHING IT.

Pharm. Era 11, 249-250 and 344-346 and 396-398 and 505-506 (1894).

A GLIMPSE INTO THE STUDY OF PHARMACOGNOSY.

The Pharmacologist 1, 46-53 (1897).

TEA CULTURE.

Proc. Mich. State Pharm. Assoc. 16, 41-50 (1898).

J. O. Schlotterbeck

1892—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

5. (In collaboration with A. Van Zwaluwenburg.)
CLOVE BARK.
The Pharmacologist 1, 103-105 (1898).

6. (In collaboration with A. Van Zwaluwenburg.)
DEVELOPMENTAL HISTORY
OF IMPORTANT SEEDS: COTTON SEED AND CACAO SEED.
Proc. Am. Pharm. Assoc. 47, 185-194 (1899).
Pharm. Archives 2, 333-343 (Nov. 1899).
Note also in Am. J. Pharm. 71, 497 (Oct. 1899).

7. (In collaboration with Paul Murrill.)
THE ALKALOIDS OF BOCCONIA CORDATA.
Proc. Am. Pharm. Assoc. 48, 128-133 (1900).
Ber. 33, 2802-2807 (1900).
Note also in Am. J. Pharm. 72, 297 (June 1900).

8. (In collaboration with Paul Murrill.)
THE ASSAY OF SANGUINARIA AND ITS PREPARATIONS.
Merck's Report, New York (Oct. 1900), p. 451-452.

9. THE NATURE OF COMMERCIAL SANGUINARINE NITRATE.
Pharm. Review 18, 358-362 (Aug. 1900).
Note in Am. J. Pharm. 72, 301 (June 1900).

(Review of) A MANUAL OF ORGANIC MATERIA MEDICA AND PHARMACOGNOSY, by Lucius E. Sayre, Philadelphia: P. Blakiston's Son & Co., 1899.

Pharm. Review 18, 42-45 (Jan. 1900).

(Review of) DIE MIKROSKOPISCHE ANALYSE DER DROGENPULVER, by Ludwig Koch.

Berlin: Gebrüder Bornträger, 1900.

Pharm. Review 18, 381-383 and 529-530 (1900), and Pharm. Review 19, 371-372 and 571-572 (1901).

J. O. Schlotterbeck

1892—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

10. ADLUMIA CIRRHOSA: A
NEW PROTOPINE-BEARING
PLANT.

Am. Chem. J. 24, 249-253
(Sept. 1900).

Notes in Am. J. Pharm. 72,
302 (June 1900) and Am.
Druggist 37, 374 (1900).

11. THE STRUCTURE AND DE-
VELOPMENT OF THE FRUIT OF
ILICUM FLORIDANUM.

(With C. R. Eckler.)

Pharm. Archives 4, 201-205
(Nov. 1901).

Proc. Am. Pharm. Assoc.
49, 285-289 (1901).

(Review of) A MANUAL OF
MATERIA MEDICA AND PHAR-
MACOLOGY, by David M. R.
Culbreth. Second Edition.
Philadelphia: Lea Bros. & Co.,
1900.

Pharm. Review 19, 83-84,
(Feb. 1901).

12. CONTRIBUTION TO THE
CHEMISTRY OF STYLOPHOR-
UM DIPHYLLUM. (With H.
C. Watkins.)

Pharm. Review 19, 453-458
(Oct. 1901).

Proc. Am. Pharm. Assoc.
49, 251-265 (1901).

J. Am. Chem. Soc. 24, 1-18
(Jan. 1902).

Ber. 35, 7-23 (Jan. 1902).

13. DOES "ARGEMONE MEXICA-
NA" CONTAIN MORPHINE?

Proc. Am. Pharm. Assoc.
49, 247-251 (1901).

J. Am. Chem. Soc. 24, 238-
242 (Mar. 1902).

Pharm. Review 19, 458-461
(Oct. 1901).

J. O. Schlotterbeck

1892—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

14. CHELIDOXANTHIN IS IMPURE BERBERINE. (Preliminary Notice.)
Pharm. Review 20, 4-5
(Jan. 1902).

(In collaboration with A.
B. Prescott.)

SCOPOLA VERSUS BELLADONNA.

See Prescott No. 36 (1902).

15. THE DEVELOPMENT AND STRUCTURE OF THE SEED OF STYLOPHORUM DIPHYLLUM. (With C. R. Eckler.)
Proc. Am. Pharm. Assoc. 50, 401-404 (1902).

16. THE COLOR COMPOUND OF STYLOPHORUM DIPHYLLUM. AND CHELIDONIUM MAJUS. Am. J. Pharm. 74, 584-586 (Dec. 1902).
Proc. Am. Pharm. Assoc. 50, 404-407 (1902).

THE MYDRIATIC 'ALKALOIDS.
(An Address.)

Proc. Am. Pharm. Assoc. 51, 151-154 (1903).

Am. J. Pharm. 75, 454-459
(Oct. 1903).

17. THE ALKALOIDS OF ADLUMIA CIRRHOSA. (Second Paper.) (With H. C. Watkins.)
Proc. Am. Pharm. Assoc. 50, 332-336 (1902).
J. Am. Chem. Soc. 25, 596-601 (June 1903).
Pharm. Archives 6, 17-22
(Jan. 1903).

18. CONTRIBUTION TO THE CHEMISTRY OF CHELIDONINE. (With H. C. Watkins.)
Proc. Am. Pharm. Assoc. 51, 321-323 (1903).

J. O. Schlotterbeck

1892—

ORIGINAL
CONTRIBUTIONS

19. CONTRIBUTION TO THE
CHEMISTRY OF CHELIDON-
INE. (With B. S. Knapp.)
Proc. Am. Pharm. Assoc.
53, 216-223 (1905).
20. A CONTRIBUTION TO THE
CHEMISTRY OF BOCCONIA
CORDATA. (With W. H.
Blome.)
Proc. Am. Pharm. Assoc.
53, 333-342 (1905).
Pharm. Review 23, 310-
321 (1905).
21. THE DEVELOPMENT AND
STRUCTURE OF THE SEED OF
ARGEMONE MEXICANA.
Proc. Am. Pharm. Assoc.
54, 466-469 (1906).

OTHER
PUBLICATIONS

A TRIBUTE TO DR. A. B.
PRESCOTT.
Bull. Pharm. 19, 141-145
(Apr. 1905).

(Review of) A MANUAL OF
MATERIA MEDICA, by D. M. R.
Culbreth. Fourth Edition,
Philadelphia: Lea Bros. & Co.,
1906.

Bull. Pharm. 20, 156-157
(Apr. 1906).

THE CONDITIONS OF PHAR-
MACY IN SWITZERLAND. (An
Address.)

Proc. Mich. State Pharm.
Assoc. 24, 49-53 (1906).

(Review of) LES APPLICA-
TIONS COURANTES DU MICRO-
SCOPE, by C. N. Peltriset.

Paris: Vigot Frères, 1907.
Pharm. Review 25, 26-27
(Jan. 1907).

(Review of) EINFUEHRUNG
IN DIE MIKROSKOPISCHE ANA-
LYSE DER DROGENPULVER, by
Ludwig Koch, Berlin: Gebrü-
der Bornträger, 1906.

Pharm. Review 25, 27-29
(Jan. 1907).

(Review of) A TEXT BOOK
OF BOTANY AND PHARMACOG-
NOSY, by Henry Kraemer.
Philadelphia: J. B. Lippincott
& Co., 1907.

Pharm. Review 25, 246-248
(Aug. 1907).

J. O. Schlotterbeck

1892—

ORIGINAL
CONTRIBUTIONS

22. (In collaboration with J. R. Dean.)
VANILLA EXTRACT.
Minutes of Sixth Annual Meeting, Flavoring Extract Manufacturers' Assoc. of U. S., 26-40 (July 1915).

OTHER
PUBLICATIONS

THE POPULAR SYNTHETICS.
Bull. Pharm. 21, 329-332
(Aug. 1907).

INSTRUCTIVE ADVERTISING.
Proc. Mich. State Pharm.
Assoc. 25, 72-75, 1907.

(Review of) A MANUAL OF
MATERIA MEDICA, by Edsel A.
Ruddiman. New York: Lea
Bros. & Co., 1907.

Pharm. Review 26, 27-28
(Jan. 1908).

(Review of) PHARMAKNOS-
TISCHES PRAKTIKUM, by Lud-
wig Koch and Ernest Gilg.
Berlin: Gebrüder Bornträger,
1907.

Pharm. Review 26, 28-29
(Jan. 1908).

(Review of) HANDBUCH DER
PHARMAKOLOGIE, by A.
Tschirch, Leipsic: Chr. Herm.
Tauchnitz, 1908.

Pharm. Review 26, 317-319
and 349-351 (1908).

A PLEA FOR PREREQUISITE
LEGISLATION.

Bull. Pharm. 24, 280-283
(July 1910).

P. L. Sherman, Jr.

1896—1899

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

(In collaboration with Paul
C. Freer.)

ON THE CONSTITUTION OF
SOME DERIVATIVES OF FOR-
MIC ACID.

See Paul C. Freer No. 15,
1896.

(In collaboration with Paul
C. Freer.)

FORMAMIDE AND ITS SODIUM
AND SILVER SALTS.

See Paul C. Freer, No. 19,
1898.

1. SAW PALMETTO. (With C.
H. Briggs.)
Pharm. Archives 2, 101-116
(June 1899).

William Gabb Smeaton

1902—

ORIGINAL
CONTRIBUTIONS

1. NOTES ON THE ETCHING OF STEEL SECTIONS.
Iron & Steel Mag. 9, 222-230 (Mar. 1905).
2. AN IMPROVED COLORIMETER.
J. Am. Chem. Soc. 28, 1433-1435 (Oct. 1906).

OTHER
PUBLICATIONS

METALLOGRAPHY AT THE UNIVERSITY OF MICHIGAN.
Iron & Steel Mag. 9, 113-117 (Feb. 1905).

(Translation of) THE PRINCIPLES OF QUALITATIVE ANALYSIS FROM THE STANDPOINT OF THE THEORY OF ELECTROLYTIC DISSOCIATION AND THE LAW OF MASS ACTION, by Wilhelm Böttger. Revised and enlarged. Philadelphia: P. Blakiston's Son & Co., 1906, pp. 300.

FREEZING POINT MEASUREMENTS. In abstract form only.
Science (n.s.) 24, 205 (Aug. 1906).

(Review of) A MANUAL OF VOLUMETRIC ANALYSIS, by Virgil Coblentz. Second Edition. Revised by Anton Vorisek. Philadelphia: P. Blakiston's Son & Co. (1909).

J. Phys. Chem. 14, 911 (Dec. 1910).

(Review of) A MANUAL OF QUALITATIVE ANALYSIS, by J. F. McGregory. Revised Edition. Boston: Ginn & Co. (1909).

J. Phys. Chem. 14, 912 (Dec. 1910).

(Review of) AN ELEMENTARY TREATISE ON QUALITATIVE CHEMICAL ANALYSIS, by J. F. Sellers. Revised Edition. Boston: Ginn & Co. (1909).

J. Phys. Chem. 14, 912 (Dec. 1910).

William Gabb Smeaton

1902—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

(Review of) A COURSE IN
QUALITATIVE CHEMICAL
ANALYSIS, by Charles Basker-
ville and Louis J. Curtman,
New York: McMillan & Co.
(1910).

J. Am. Chem. Soc. 33, 998
(June 1911).

(Translation of) THE PRIN-
CIPLES OF QUALITATIVE ANALY-
SIS, by W. Böttger. Second
Edition. Revised.

Philadelphia: P. Blakiston's
Son & Co., 1911, pp. 300.

Frank Clemes Smith

1889—1890

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

SELECT METHODS IN QUANTITATIVE ANALYSIS, by Byron W. Cheever, arranged from his manuscript by Frank C. Smith. Parts I and II. Second Edition, Ann Arbor, 1888, pp. 100.

A. B. Stevens

1886—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

*The Strength of the Crude
and Powdered Opium in Use
in Michigan.*

*Proc. Mich. State Pharm.
Assoc. 2, 132-133 (1884).*

THE QUALITY OF SOLUTIONS
OF CITRATE OF MAGNESIUM OF
COMMERCE.

*Proc. Mich. State Pharm.
Assoc. 3, 143-145 (1885).*

See also same journal 8, 58-
59 (1890).

A STUDY OF PREPARATIONS
MADE BY WEIGHT AND ALSO BY
MEASURE.

*Proc. Mich. State Pharm.
Assoc. 5, 174-176 (1887).*

*Pharm. Era 1, 286-287 (Aug.
1887).*

*Pharm. Record 7, 338 (Nov.
1887).*

THE BEST PLACE FOR LOCA-
TION OF PRESCRIPTION STAND
IN A DRUG STORE.

*Proc. Mich. State Pharm.
Assoc. 5, 209-210 (1887).*

THE ARITHMETIC OF PHAR-
MACY. (A Series of communi-
cations.)

*Pharm. Era 1, 28, 58, 89, 120,
156, 263, 328, 373, 414 (1887).*

- I. PEPPERMENT OIL.
Proc. Am. Pharm. Assoc.
36, 97-99 (1888).
Pharm. Record 8, 318 (Oct.
(1888).

(In collaboration with W.
H. Krug.)

PHOTOMICROGRAPHY.
Proc. Am. Pharm. Assoc. 37,
84-86 (1889).

A. B. Stevens

1886—

ORIGINAL
CONTRIBUTIONS

2. THE DETECTION OF OIL OF CAMPHOR WHEN USED AS AN ADULTERANT.
Proc. Am. Pharm. Assoc. 39, 134-135 (1891).
Pharm. Record 11, 346-347 (June 1891).
3. ASSAY OF WILD CHERRY BARK. (With J. N. Judy.)
Proc. Am. Pharm. Assoc. 43, 226-229 (1895).
Am. J. Pharm. 67, 534-537 (Oct. 1895).
Am. Druggist 27, 184-185 (1895).
4. VALUATION OF WILD CHERRY BARK.
Am. Druggist 29, 142-143 (1896).
Proc. Am. Pharm. Assoc. 44, 215-220 (1896).

OTHER
PUBLICATIONS

LEAD PLASTER VERSUS LEAD OLEATE.

Proc. Am. Pharm. Assoc. 39, 90 (1891).

Pharm. Record 11, 346 (June 1891).

SATURATION TABLES.

Proc. Mich. State Pharm. Assoc. 9, 97-103 (1891).

OLEATE OF MERCURY.

Proc. Am. Pharm. Assoc. 40, 250-252 (1892).

CHLORODYNE AND SIMILAR PREPARATIONS.

Proc. Mich. State Pharm. Assoc. 10, 63-64 (1892).

ELIXIR OF THE PHOSPHATES OF IRON, QUININE AND STRYCHNINE. (With G. A. Doty.)

Proc. Mich. State Pharm. Assoc. 13, 138-141 (1895).

ACTION OF LIGHT UPON PHARMACEUTICAL PRODUCTS.

Am. Druggist 29, 36 (1896).

Bull. Pharm. 10, 446-447 (Oct. 1896).

DOSES IN THE PHARMACOPOEIA.

Am. Druggist 29, 67-68 (1896).

CALX CHLORATA.

Proc. Mich. State Pharm. Assoc. 15, 42-44 (1897).

A. B. Stevens

1886—

ORIGINAL
CONTRIBUTIONS

5. WILD CHERRY BARK: DE-
TERIORATION WITH AGE.
Proc. Am. Pharm. Assoc.
47, 184-185 (1899).
Pharm. Review 17, 445-446
(Oct. 1899).
Note in Am. J. Pharm. 71,
497 (Oct. 1899).
6. WILD CHERRY BARK AND
ITS PREPARATIONS.
Proc. Am. Pharm. Assoc.
48, 207-211 (1900).
Note in Am. J. Pharm. 72,
300 (June 1900).
7. OPIUM ASSAY I.
Pharm. Archives 4, 81-86
(May 1901).
8. OPIUM ASSAY II.
Pharm. Archives 5, 41-45
(Mar. 1902).
9. OPIUM ASSAY III.
Pharm. Archives 5, 87-93
(May 1902).
10. ASSAY OF MOIST OPIUM
AND THE TINCTURES OF
OPIUM.
Proc. Am. Pharm. Assoc.
50, 425-429 (1902).
Pharm. Review 20, 463-
464 (Oct. 1902).
11. ACONITE: A COMPARISON
OF THE CHEMICAL AND
PHYSIOLOGICAL METHOD OF
ASSAY.
Pharm. Archives 6, 49-55
(1903).

OTHER
PUBLICATIONSCATHARTIC ACID IN RHU-
BARD.Proc. Am. Pharm. Assoc. 46,
337-340 (1898).Note in Am. J. Pharm. 70,
480 (Sept. 1898).

FLUID EXTRACT OF SQUILL.

Proc. Mich. State Pharm.
Assoc. 18, 52 (1900).

Am. Druggist 37, 132 (1900).

(Review of) INCOMPATIBILI-
TIES IN PRESCRIPTIONS, by E.
A. Ruddiman. Second Edition.
New York: John Wiley &
Sons, 1900.Pharm. Review 19, 39-40
(Jan. 1901).

LABORATORY NOTES.

Pharm. Review 20, 464-466
(Oct. 1902).Proc. Am. Pharm. Assoc. 50,
427-429 (1902).

ARITHMETIC OF PHARMACY.

New York: Merck & Co.
(1905). pp. 85 + viii.

A. B. Stevens

1886—

- | ORIGINAL
CONTRIBUTIONS | OTHER
PUBLICATIONS |
|--|--|
| 12. NITROGEN IN GUMS.
Am. J. Pharm. 77, 255-260
(June 1905). | ZINC DUST.
Am. J. Pharm. 77, 260-262
(June 1905). |
| 13. (During Leave of Absence.)
JAPANESE LAC. (KI-URU-SHI.)
Inaugural Dissertation,
University of Berne.
Also in Proc. Am. Pharm.
Assoc. 53, 311-319 (1905).
Am. J. Pharm. 78, 53-64
(Feb. 1906).
(With A. Tschirch) Arch.
Pharm. 243, 504-553 (1905). | BIOGRAPHICAL SKETCH OF
PROFESSOR A. TSCHIRCH.
Am. J. Pharm. 78, 38-40
(Jan. 1906).

(Review of) WHY'S IN
PHARMACY, by Edsel A. Rud-
diman, New York: John Wiley
& Sons, 1906.
Pharm. Review 24, 125-126
(Apr. 1906).

POISONOUS SPECIES OF RHUS.
Proc. Mich. State Pharm.
Assoc. 24, 61-64 (1906).
Pharm. Era 36, 527-529
(Dec. 1906).

PHARMACOPOEIAL CRITICISMS.
Proc. Mich. State Pharm.
Assoc. 24, 93-97 (1906).

PERCENTAGES OF ALCOHOL IN
OFFICIAL FLUID EXTRACTS.
Pharm. Era 37, 56 and 130
(1907).

ARITHMETIC OF PHARMACY.
Second Edition. New York:
Merck & Co., 1907. pp. xii +
50.

(Review of) BOTANY AND
PHARMACOGNOSY, by Henry
Kraemer. Second Edition.
Philadelphia: J. B. Lippincott
& Co.
J. Am. Chem. Soc. 29, 1247-
1248 (Aug. 1907). |
| 14. POISON SUMAC. (With L.
E. Warren.)
Am. J. Pharm. 79, 499-522
(Nov. 1907).
Proc. Am. Pharm. Assoc.
55, 423-443 (1907). | |

A. B. Stevens

1886—

ORIGINAL
CONTRIBUTIONS

15. CITRUS-COMPOUNDS OF IRON.
Proc. Am. Pharm. Assoc.
55, 153-156 (1907).
Pharm. Review 25, 299-302
(Oct. 1907).
Supplementary note . in
Pharm. Review 26, 131
May 1908).

16. THE ASSAY OF ACONITE.
Bull. Pharm. 25, 237-239
(June 1911).

OTHER
PUBLICATIONS

POISON IVY FRUIT.
Am. J. Pharm. 80, 93 (Feb.
1908).

(Review of) THE ART OF
DISPENSING, by Peter Mac-
Ewan. Eighth Edition. Pub.
by Chemist and Druggist, 1908.
Pharm. Review 26, 316 (Oct.
1908).

(Review of) INCOMPATIBILITIES
IN PRESCRIPTIONS, by Ed-
sel A. Ruddiman. Third Edi-
tion.
Pharm. Review 26, 349
(Nov. 1908).

NOTE ON EMULSIONS.
Proc. Am. Pharm. Assoc. 57,
974-975 (1909).

A MANUAL OF PHARMACY
AND DISPENSING.
Philadelphia: Lea and Feb-
inger, 1909. pp. xi + 421.

STANDARDIZATION OF SOLU-
TIONS FOR ALKALOIDAL ASSAY.
(With A. F. Schlichting.)
J. Am. Pharm. Assoc. 1,
605-607 (1912).

ARITHMETIC OF PHARMACY.
Third Edition. New York:
Merck & Co., 1913. pp. xii +
90.

THE REGULATION OF DEGREES.
Am. J. Pharm. 85, 445-447
(Oct. 1913).

A. B. Stevens

1886—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONSTHE NATIONAL FORMULARY.
An Historical Sketch.Pharm. Era 45, 321-323
(May 1912).CONTRIBUTIONS TO NATIONAL
FORMULARY. First Edition,
1888. Second Edition, 1896.
Third Edition, 1906, and
Fourth Edition, 1916. As mem-
ber of committee on Revision.CONTRIBUTIONS TO UNITED
STATES PHARMACOPOEIA. Eighth
Revision, 1905, and Ninth Re-
vision, 1916. As member of
committee on Revision.

Eugene C. Sullivan

1899—1903

ORIGINAL
CONTRIBUTIONS

OTHER
PUBLICATIONS

(In collaboration with A. B. Prescott.)

FIRST BOOK OF QUALITATIVE
CHEMISTRY, FOR STUDIES OF
WATER, SOLUTION AND MASS
ACTION. Eleventh Edition. Re-
written. New York: D. van
Nostrand Co., 1902. pp. 148.

Richard C. Tolman

1910—1911

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

1. NOTE ON THE DERIVATION FROM THE PRINCIPLE OF RELATIVITY OF THE FIFTH FUNDAMENTAL EQUATION OF THE MAXWELL - LORENTZ THEORY.
Phil. Mag. [Series 6] 21, 296-301 (1911).
2. NON-NEWTONIAN MECHANICS:—THE DIRECTION OF FORCE AND ACCELERATION.
Phil. Mag. [Series 6] 22, 458-463 (1911).
3. THE FREE ENERGY OF DILUTION OF HYDROCHLORIC ACID. (With Alfred L. Ferguson.)
J. Am. Chem. Soc. 34, 232-246 (Mar. 1912).
4. THE CONCENTRATION OF HYDROGEN ION IN SULFURIC ACID. (With Lucien H. Greathouse.)
J. Am. Chem. Soc. 34, 364-369 (Apr. 1912).

Perry F. Trowbridge

1895—1902

ORIGINAL
CONTRIBUTIONS

(In collaboration with A. B. Prescott.)

PERIODIDES OF PYRIDINE.

See A. B. Prescott No. 14.

OTHER
PUBLICATIONS

1. PERIODIDES OF PYRIDINE.
J. Am. Chem. Soc. 19, 322-331 (Apr. 1897).

2. HALIDES AND PERHALIDES OF PYRIDINE. (With O. C. Diehl.)
J. Am. Chem. Soc. 19, 558-574 (July 1897).

3. PERHALIDES OF QUINOLINE.
J. Am. Chem. Soc. 21, 66-72 (Jan. 1899).

(During Leave of Absence.)
Contributions from Pharm. Inst., University of Marburg; the following papers 4, 5, and 6.

4. UEBER DIE EINWIRKUNG DES METHYLENIODIDS AUF STRYCHNIN.
Arch. Pharm. 237, 617-622 (Nov. 1899).

5. UEBER DAS VERHALTEN DES IODOFORMS UND CHLOROFORMS GEGEN STRYCHNIN.
Arch. Pharm. 237, 622-625 (Nov. 1899).

6. UEBER EINIGE ABKOEMMLINGE DES STRYCHNINS.
Arch. Pharm. 238, 241-253 (June 1900).

7. NOTES ON SUGAR BEETS.
J. Am. Chem. Soc. 23, 216-223 (Apr. 1901).

Victor C. Vaughan*

1876—1903

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

(In collaboration with A. B. Prescott.)

Qualitative Separation of Arsenic from Antimony, Tin, Copper, Bismuth, and Mercury by Treatment of Their Sulphides with Strong Nitric Acid.

See A. B. Prescott, No. 3 (1875).

1. ON THE ESTIMATION OF ARSENIC AS ARSENIC ANHYDRIDE BY TREATMENT OF THE SULPHIDE WITH STRONG NITRIC ACID. (With Samuel T. Douglas.)

Am. Chemist 7, 348-349 (Mar. 1877).

2. ESTIMATION OF LIME IN THE SHELL AND IN THE INTERIOR OF THE EGG BEFORE AND AFTER INCUBATION. (With Harriet V. Bills.)

J. Physiology 1, 434-436 (1878-1879).
Phys. & Surg. 1, 106-108 (Mar. 1879).

3. CONTAMINATION OF DRINKING WATER BY INFILTRATION OF ORGANIC MATTER THROUGH THE SOIL. (With P. E. Nagle.)

Detroit Lancet 3, 359-362 Feb. 1880).

Sanitarian 8, 156-159 (Apr. 1880).

Rep. Mich. State Board of Health, 1880, p. 10-13.

THE FORCE VALUE OF FOODS. Phys. & Surg. 1, 5-9 (Jan. 1879).

Rep. Mich. State Board of Health, 1881, 49-53.

UNOXIDIZED SULPHUR IN THE URINE.

Phys. & Surg. 1, 47-48 (Feb. 1879).

DAILY CYCLE OF CHANGES.

Phys. & Surg. 1, 93-96 (Mar. 1879).

LECTURE NOTES ON CHEMICAL PHYSIOLOGY AND PATHOLOGY.

Ann Arbor: Ann Arbor Printing & Pub. Co., 1878. pp. 74.

CHEMICAL PHYSIOLOGY AND PATHOLOGY.

Second Edition. Ann Arbor: Ann Arbor Print. and Pub. Co., 1879. pp. 315. Part II. Plates. Ann Arbor: Sheehan & Co., 1879. pp. 24.

* This bibliography of Dr. V. C. Vaughan includes only those titles bearing upon physiological chemistry between the years 1876 to 1903.

Victor C. Vaughan*

1876—1903

ORIGINAL
CONTRIBUTIONS

4. THE COMPOSITION OF THE URINE IN A CASE OF CANCER OF THE LIVER. (With Harriet C. Beringer.) *Phys. & Surg.* 4, 337-348 (Aug. 1882).
5. DIFFUSION OF ARSENIC THROUGH THE BODY WHEN THROWN INTO THE MOUTH AND RECTUM AFTER DEATH. (With J. H. Dawson.) *J. Am. Med. Assoc.* 1, 115-116 (Aug. 1883).
6. DISTRIBUTION OF ARSENIC THROUGH THE BODY IN ARSENICAL POISONING. (With J. H. Dawson.) *Phys. & Surg.* 5, 381-384 (Aug. 1883).
See also *J. Am. Med. Assoc.* 2, 152-153 (Feb. 1884).
7. CONSIDERATIONS CONCERNING THE PRACTICAL USE OF MERCURIC CHLORIDE AS A DISINFECTANT. *Med. News* 47, 235-236 (Aug. 1885).
8. PRELIMINARY NOTE ON THE CHEMISTRY OF TYROTOXICON. *Med. News* 50, 369-370 (Apr. 1887).
9. TYROTOXICON: ITS NATURE, ITS CHEMISTRY AND ITS ACTION UPON ANIMALS. *Trans. Ninth International Med. Cong.* 3, 382-387 (1887).

OTHER
PUBLICATIONS

CHEMICAL PHYSIOLOGY AND PATHOLOGY: WITH LECTURES UPON NORMAL AND ABNORMAL URINE. Third Edition. Ann Arbor, 1880.

MEATS.
Rep. Mich. State Board of Health, 1882, p. 220-224.

A LECTURE ON THE PHYSIOLOGICAL ACTION AND THERAPEUTICAL USES OF HYOSCYAMUS.
Phys. & Surg. 5, 145-151 (Apr. 1883).

DISINFECTION WITH MINERAL ACIDS.
Med. News 47, 62-64 (July 1885).

POISONOUS OR "SICK" CHEESE.
Rep. Am. Public Health Assoc. 1884, p. 241-245.
Rep. Mich. State Board of Health, 1885, p. 221-226.
Zeit. Physiol. Chemie. 10, 146-149 (1886).

ICE CREAM POISONING.
Med. Record 30, 154-155 (Aug. 1886).

TYROTOXICON AND CHOLERA INFANTUM.
Med. Age 4, 342-343 (Aug. 1886).

Victor C. Vaughan*

1876—1903

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

TYROTOXICON; ITS PRESENCE
IN POISONOUS ICE CREAM; ITS
DEVELOPMENT IN MILK; AND
ITS PROBABLE RELATION TO
CHOLERA INFANTUM AND KINDRED
DISEASES.

Rep. Mich. State Board of
Health, 1886, 154-164.

Sanitarian 17, 300-311 (Oct.
1886).

Arch. f. Hyg. 7, 420-440
(1887).

FOUR CASES OF POISONING
FROM TYROTOXICON WITH
THREE FATAL RESULTS; INVESTIGATIONS
AS TO THE ORIGIN
OF THE POISON; RESULTS OF
THE AUTOPSY AND CHEMICAL
ANALYSES.

Rep. Mich. State Board of
Health, 1887, p. 12-19.

Med. News 51, 644-649 (Dec.
1887).

10. THE CHEMISTRY OF TYROTOXICON: ITS ACTION UPON LOWER ANIMALS; AND ITS RELATION TO THE SUMMER DIARRHEAS OF INFANCY.
J. Am. Med. Assoc. 9, 361-366 (Sept. 1887).

THE USE OF COW'S MILK IN
THE ARTIFICIAL FEEDING OF INFANTS.

Trans. Ninth International
Med. Cong. 3, 485-489 (1887).

11. EXPERIMENTAL STUDIES ON SOME POINTS CONNECTED WITH THE CAUSATION AND TREATMENT OF THE SUMMER DIARRHEAS OF INFANCY.
Med. News 52, 621-628 (June 1888).

EXPERIMENTAL STUDIES ON
SOME POINTS CONCERNING THE
CAUSATION AND TREATMENT OF
THE SUMMER DIARRHEA OF INFANTS.

Boston Med. & Surg. J. 119,
14-16 (July 1888).

Victor C. Vaughan*

1876—1903

ORIGINAL
CONTRIBUTIONS

12. THE EXAMINATION OF DRINKING WATER WITH SPECIAL REFERENCE TO ITS RELATION TO TYPHOID FEVER.
Med. News 56, 641-646 (June 1890).
13. A CONTRIBUTION TO THE CHEMICAL STUDY OF THE SUMMER DIARRHEAS OF INFANCY.
Trans. Am. Pediat. Soc. 1890, p. 109-115.

OTHER
PUBLICATIONS

PTOMAINES AND LEUCOMAINES, OR THE PUTREFACTIVE AND PHYSIOLOGICAL ALKALOIDS.
(With F. G. Novy.)

Philadelphia: Lea Bros. & Co., 1888. pp. 316.

THE VALUE OF MERCURIC CHLORIDE AS A PRACTICAL DISINFECTANT.

Boston Med. & Surg. J. 120, 1-3 (Jan. 1889).

LEUCOMAINES AND PTOMAINES AND THEIR RELATIONS TO DISEASE.

Proc. Quarant. Confer. Montgomery, Ala., 1889.

SOME NEW BACTERIAL POISONS; THEIR CAUSAL RELATIONS TO DISEASE; AND THE CHANGES IN OUR THEORIES SUGGESTED BY THEIR ACTION.

Med. News 57, 158-162 (Aug. 1890).

THE FUNDAMENTAL FACTORS IN THE CAUSATION OF THE INFECTIOUS DISEASES.

N. Am. Practitioner 2, 337-342 (Aug. 1890).

A NEW POISON IN CHEESE.
Med. & Surg. Reporter 63, 584-585 (Nov. 1890).

THE CHEMICAL FACTORS IN THE CAUSATION OF DISEASE.

I. Am. Med. Assoc. 16, 613-618 and 664-670 and 697-702 (May 1891).

Victor C. Vaughan*

1876—1903

ORIGINAL
CONTRIBUTIONS

14. THE GERMICIDAL PROPERTIES OF NUCLEINS. (With F. G. Novy and C. T. McClintock.)
Med. News, 62, 536-528 (May 1893).
15. THE NATURE OF THE GERMICIDAL CONSTITUENT OF BLOOD SERUM. (With C. T. McClintock.)
Med. News 63, 701-707 (Dec. 1893).
16. THE NUCLEINS AND NUCLEIN THERAPY.
J. Am. Med. Assoc. 22, 823-831 (June 1894).
Trans. Mich. State Med. Soc. 18, 22-50 (1894).
17. THE TREATMENT OF TUBERCULOSIS WITH YEAST NUCLEIN.
Med. News 65, 657-659 and 675-681 (Dec. 1894).
18. THE CHEMICAL PRODUCTS OF THE ANAEROBIC PUTREFACTION OF PANCREATIC AND HEPATIC TISSUES, AND THEIR EFFECTS UPON THE TESTS FOR MORPHINE.
Trans. Assoc. Am. Physicians 9, 249-256 (1894).
19. POISON PRODUCING BACILLUS FOUND IN ICE CREAM AND CHEESE. (With George D. Perkins.)
Trans. Assoc. Am. Physicians 11, 14-30 (1896).

OTHER
PUBLICATIONS

THE GROWING IMPORTANCE OF CHEMICAL STUDIES IN MEDICAL EDUCATION AND IN MEDICAL RESEARCH.

J. Am. Med. Assoc. 16, 734-741 (May 1891).

Weekly Med. Review (St. Louis) 24, 1-8 (July 1891).

PTOMAINES, LEUCOMAINES, AND BACTERIAL PROTEIDS. OR THE CHEMICAL FACTORS IN THE CAUSATION OF DISEASE. (With F. G. Novy.) Second Edition. Revised and enlarged. Philadelphia: Lea Bros. & Co., 1891. pp. 391.

THE INFECTION OF FOOD.
Trans. Mich. State Med. Soc. 16, 82-98 (1892).

FOOD INFECTION WITH TOXICOGENIC GERMS. (With George D. Perkins.)

Med. News 67, 538-542 (Nov. 1895).

Sanitarian 36, 20-28 (Jan. 1896).

BACTERIAL POISONS IN MILK AND MILK PRODUCTS.

Proc. Third Ann. Conf. Health Officers of Mich., 1896, p. 20-28.

PTOMAINES, LEUCOMAINS, TOXINS AND ANTITOXINS: OR THE CHEMICAL FACTORS IN THE CAUSATION OF DISEASE. (With F. G. Novy.) Third Edition. Revised and enlarged. Philadelphia: Lea Bros. & Co., 1895. pp. 604.

Victor C. Vaughan*

1876—1903

ORIGINAL
CONTRIBUTIONS

20. THE TREATMENT OF ANTHRAX IN RABBITS BY THE INTRAVENOUS INJECTION OF YEAST NUCLEINIC ACID. (With C. T. McClintock and G. D. Perkins.) *Trans. Assoc. Am. Physicians* 11, 72-74 (1896).
21. THE PHYSIOLOGICAL ACTION AND THERAPEUTIC USES OF YEAST NUCLEINIC ACID, WITH SPECIAL REFERENCE TO ITS EMPLOYMENT IN TUBERCULOSIS. *Med. News* 70, 257-264 and 296-302 and 328-332 and 362-366 and 387-395 (1897).
22. BACTERIOLOGY OF CHEESE. (With J. T. McClymonds.) *Trans. Assoc. Am. Physicians* 13, 266-271 (1898).
23. THE TOXIN OF THE COLON BACILLUS. *Am. Med.* 1, 302-304 (May 1901).
24. THE BACTERIAL TONINS. (With T. B. Cooley.) *J. Am. Med. Assoc.* 36, 470-482 (Feb. 1901).

OTHER
PUBLICATIONS

PTOMAINS, TOXINS AND LEUCOMAINS. (Chapter in: *Twentieth Cen. Pract. of Medicine*, Vol. XIII, 1-131 (1898).

A Supplementary Chapter, Vol. XXI, 526-552 (1902).

FOOD POISONING (BROMATOXISMUS). (Chapter in: *American System of Practical Medicine*, by Loomis & Thompson, Vol. 3, 359-386, New York: Lea Bros. & Co.) 1898.

IS URIC ACID DIATHESIS AN IMPORTANT FACTOR IN PATHOLOGY?

THE PHYSIOLOGICAL CHEMISTRY OF URIC ACID.

Trans. Assoc. Am. Physicians 13, 147-160 (1898).

Philadelphia Med. J. 2, 612-617 (Sept. 1898).

INTOXICATIONS. (Chapter in: *An American Text Book of Pathology*, by Hektoen and Reisman, Philadelphia: W. B. Saunders & Co.) 1901, p. 352-393.

THE ETIOLOGY OF GALL STONES.

Phys. & Surg. 23, 289-292 (July 1901).

CELLULAR TOXINS, OR THE CHEMICAL FACTORS IN THE CAUSATION OF DISEASE. (With F. G. Novy.) Fourth Edition. Revised. Phila: and New York: Lea Bros. & Co., 1902. pp. 495.

Victor C. Vaughan*

1876—1903

ORIGINAL
CONTRIBUTIONS

25. A STUDY OF BACTERIAL CELLS.
Trans. Assoc. Am. Physicians 17, 243-331 (1902).
26. THE USE OF BORAX AND BORIC ACID AS FOOD PRESERVATIVES. (With W. H. Veenboer.)
Am. Med. 3, 421-426 (Mar. 1902).
27. A FURTHER REPORT ON THE STUDY OF BACTERIAL CELLS.
Trans. Assoc. Am. Physicians 18, 365-368 (1903).

OTHER
PUBLICATIONS

THE INTRACELLULAR TOXINS
OF SOME OF THE PATHOGENIC
BACTERIA.

J. Am. Med. Assoc. 40, 838-
840 (Mar. 1903).

Elmer E. Ware

1909—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

1. CONTROL OF INITIAL SETTING
TIME OF PORTLAND CEMENT.
J. Ind. Eng. Chem. 5, 369-
371 (May 1913).
2. PAINT FILMS AS PROTEC-
TIVE COATINGS FOR CON-
CRETE. (With S. M. Schott.)
J. Ind. Eng. Chem. 6, 184-
189 (Mar. 1914).
3. EXAMINATION OF CHINESE
WOOD OIL. (With C. L.
Schumann.)
Proc. Am. Soc. Testing Ma-
terials 14, 454-463 (1914).
J. Ind. Eng. Chem. 6, 806-
809 (Oct. 1914).
4. THE CONSTITUTION OF CHI-
NESE WOOD OIL. (With C. L.
Schumann.) Preliminary
Discussion.
J. Ind. Eng. Chem. 7, 571-
573 (July 1915).

Albert E. White

1911—

ORIGINAL
CONTRIBUTIONS

1. THE AVAILABILITY OF BLAST FURNACE SLAG AS A BUILDING BRICK.
Am. Inst. Chem. Eng. 5, 204-219 (1912).
2. THE EFFECT OF HEAT TREATMENT ON BRASS.
Michigan Technic 27, 114-118 (1914).

OTHER
PUBLICATIONS

MONOGRAPH: AN INVESTIGATION OF CONDENSER TUBES.

Detroit: Privately printed by Edison Illuminating Company. Ann Arbor Press, 1914. pp. x + 113.

THE J. T. JONES STEP PROCESS FOR THE METALLIZATION OF LOW GRADE IRON ORES.

Mich. Geological and Biological Survey, 1911.

Geological Series 6. Publication 8, p. 245-255.

Mich. Technic 25, No. 2, 35-48 (1912).

PIG IRON INDUSTRY IN MICHIGAN.

Mich. Geol. and Biol. Survey, 1911.

Geol. Series 6. Publication 8, p. 221-245.

Alfred H. White

1897--

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

1. A BURETTE FOR ACCURATE GAS ANALYSIS.
J. Am. Chem. Soc. 22, 343-349 (June 1900).
2. COMPOSITION OF SOME COAL TARS FROM AMERICAN GAS WORKS. (With H. W. Hess.)
J. Soc. Chem. Ind. 19, 509-511 (June 1900).
3. RELATION OF HEATING TO LIGHTING POWER OF GAS WITH SPECIAL REFERENCE TO INCANDESCENT MANTLES. (With H. Russell.)
Proc. Mich. Gas Assoc. (Feb. 1901).
Appears also in Am. Gas Light J. 74, 488-491 (Apr. 1901).
J. Gas Lighting 77, 879-881 (Apr. 1901).
4. THE OXIDATION OF NITROGEN AS A SOURCE OF ERROR IN THE ESTIMATION OF HYDROGEN AND METHANE.
J. Am. Chem. Soc. 23, 476-482 (July 1901).
5. THE THEORY OF THE INCANDESCENT MANTLE. (With H. Russell and A. F. Traver.) (First Paper.)
Proc. Mich. Gas Assoc. (Feb. 1902), pp. 17.
Appears also in Am. Gas Light J. 76, 413-416 (Mar. 1902).
Appears also in J. Gas Lighting 79, 892-894 (Apr. 1902).

Alfred H. White

1897—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

6. THE VOLUMETRIC ESTIMATION OF ALUMINA AND FREE AND COMBINED SULPHURIC ACID IN ALUMS.
J. Am. Chem. Soc. 24, 457-466 (May 1902).

7. THEORY OF THE INCANDESCENT MANTLE. Second Paper. (With A. F. Traver.)
J. Soc. Chem. Ind. 21, 1012-1017 (Aug. 1902).
J. Gas Lighting 80, 562-565 (Aug. 1902).

8. LOSS OF ILLUMINATING POWER OF MANTLES WHILE BURNING. (With Max Mueller.)
Proc. Mich. Gas Assoc. (Feb. 1903). pp. 19.
J. Gas Lighting 83, 504-508 (Aug. 1903).

9. DIFFERENT GASES IN GAS ENGINES.
Proc. Am. Gas Light Assoc. 20, 284-295 (Oct. 1903).
J. Gas Lighting 84, 620-621 (Dec. 1903).

10. THE REMOVAL OF NAPHTHALENE FROM COAL GAS. First Paper. (With S. Ball.)
Proc. Mich. Gas Assoc., 1904. pp. 22.
J. Gas Lighting 88, 262-253 (continued), (Oct. 1904).

THE CHEMICAL INDUSTRIES
OF MICHIGAN.

Proc. Mich. Academy of Science 5, 180-183 (1903).

THE VALUE OF GAS ANALYSIS
IN GAS ENGINE TESTS.

Mich. Technic 17, 68-78 (1904).

Alfred H. White

1897—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

11. THE DECOMPOSITION OF AMMONIA AT HIGH TEMPERATURES. (With Wm. Melville.)

J. Am. Chem. Soc. 27, 373-386 (Apr. 1905).

12. IMPROVEMENTS IN GAS ANALYSIS APPARATUS. (With E. D. Campbell.)

J. Am. Chem. Soc. 27, 732-736 (June 1905).

13. THE REMOVAL OF NAPHTHALENE FROM COAL GAS. Second Paper. (With David Clary.)

Proc. Mich. Gas Assoc. (Sept. 1905), p. 83-114.

J. Gas Lighting 92, 388-393 (continued). (Nov. 1905).

(In collaboration with Edward D. Campbell.)

SOME CONDITIONS INFLUENCING CONSTANCY OF VOLUME IN PORTLAND CEMENTS. See Edward D. Campbell No. 32 (1906).

14. THE REMOVAL OF NAPHTHALENE FROM COAL GAS. Third Paper. (With Joel M. Barnes.)

Proc. Mich. Gas Assoc. (Sept. 1906), pp. 31.

Am. Gas Light J. 85, 579-585 (Oct. 1906).

15. THE NITRIDES OF ZINC, ALUMINIUM, AND IRON. (With L. Kirschbraun.)

J. Am. Chem. Soc. 28, 1343-1350 (Oct. 1906).

THE COURSE IN CHEMICAL ENGINEERING AT THE UNIVERSITY OF MICHIGAN.

The Chemical Engineer 2, 262-264 (Aug. 1905).

Alfred H. White

1897—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

16. STUDIES IN THE MANUFACTURE OF COAL GAS. (With Fred E. Park.)
Proc. Mich. Gas Assoc., Sept. 1907, pp. 21.
Am. Gas Light J. 87, 625-630 (Oct. 1907).
17. DESTRUCTIVE DISTILLATION OF COAL AT LOW TEMPERATURES. (With Fred E. Park and Wm. A. Dunkley.)
Proc. Mich. Gas Assoc., Sept. 1908, 83-109.
18. FREE LIME IN PORTLAND CEMENT.
J. Ind. Eng. Chem. 1, 5-11 (Jan. 1909).
19. DISINTEGRATION OF FRESH CEMENT FLOOR SURFACES BY THE ACTION OF CARBON DIOXIDE AT LOW TEMPERATURES.
Proc. Am. Soc. Testing Materials 9, 530-533 (July 1909).
20. STUDIES IN THE MANUFACTURE OF COAL GAS. Second Paper. (With John H. Wyman, Wm. A. Dunkley and Perry Barker.)
Proc. Mich. Gas Assoc., Sept. 1909, pp. 50.
Appears, in part, in Progressive Age 27, 768-772 (Oct. 1909).
Appears also, in part, in The Gas World 51, 367-370 (Sept. 1909).
- SOLVING PROBLEMS OF GAS.
Public Service 1908, p. 146.
- THE DISINTEGRATION OF CEMENT FLOORS AND SIDEWALKS.
Michigan Technic, (1909) 22, No. 2, 18-25.

Alfred H. White

1897—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

21. CONSTANTS AND VARIABLES
IN THE DESTRUCTIVE DIS-
TILLATION OF COALS. (With
B. M. Ferguson.)
Proc. Mich. Gas Assoc.,
Sept. 1910, pp. 30.
Am. Gas Light J. 93, 580-
586 (Sept. 1910).
22. DESTRUCTION OF CEMENT
MORTARS AND CONCRETE
THROUGH EXPANSION AND
CONTRACTION.
Proc. Am. Soc. Testing
Materials 11, 531-555 (July
1911).
23. THE FUNCTION OF TAR IN
THE CONDENSATION OF COAL
GAS. (With R. S. Tour.)
Proc. Mich. Gas Assoc.,
Sept. 1911, pp. 10.
Progressive Age 29, 820-
823 (Oct. 1911).
24. COALS AVAILABLE FOR THE
MANUFACTURE OF ILLUMIN-
ATING GAS. (With Perry
Barker.)
U. S. Bureau of Mines.
Bulletin 6, 1911, pp. 75.
25. THE ELECTRICAL SEPARA-
TION OF TAR FROM COAL
GAS. First Paper. (With
John W. Hacker and
Frank Steere.)
Proc. Mich. Gas Assoc.,
Sept. 1912, 101-109.
Progressive Age 30, 882-
884 (Oct. 1912).

THE MICHIGAN GAS ASSO-
CIATION FELLOWSHIP IN GAS
ENGINEERING AT THE UNIVER-
SITY OF MICHIGAN.

Progressive Age 30, 207-211
(1912).

Alfred H. White

1897—

ORIGINAL
CONTRIBUTIONSOTHER
PUBLICATIONS

26. VOLUME CHANGES IN PORTLAND CEMENT AND CONCRETE.
Proc. Am. Soc. for Testing Materials 14, 203-241 (1914).
TECHNICAL GAS AND FUEL ANALYSIS. (International Chemical Series.) New York: McGraw-Hill Book Co., 1913, pp. x + 276.
27. THE ELECTRICAL SEPARATION OF TAR FROM COAL GAS. Second Paper. (With R. B. Rowley and C. K. Wirth.)
Proc. Mich. Gas Assoc., Sept. 1914, p. 69-83.
28. VOLUME CHANGES IN CONCRETE.
Proc. International Engineering Congress, San Francisco, Sept. 1915, pp. 32.
29. THE HEAT TREATMENT OF IRON AND STEEL IN A NEUTRAL ATMOSPHERE. (With Homer T. Hood.)
Proc. Mich. Gas Assoc., Sept. 1915, pp. 16.
30. GAS AS A CASE HARDENING AGENT. (With Homer T. Hood.)
Proc. Mich. Gas Assoc., Sept. 1915, pp. 32.

Hobart H. Willard

1905—

ORIGINAL
CONTRIBUTIONS

1. Contribution from the Department of Physics, University of Michigan.
(In collaboration with H. S. Carhart and W. D. Henderson.)

A NEW ELECTROLYTE FOR THE SILVER COULOMETER.

Trans. Am. Electrochem. Soc. 9, 375-380 (1906).

2. (During Leave of Absence.)
Contribution from Chemical Laboratory, Harvard University.

(In collaboration with Theodore W. Richards.)

FURTHER INVESTIGATION CONCERNING THE ATOMIC WEIGHTS OF SILVER, LITHIUM AND CHLORINE.

J. Am. Chem. Soc. 32, 4-49 (Jan. 1910).

Z. Anorg. Chem. 66, 229-287 (Apr. 1910).

Doctor's Dissertation, Harvard University, 1909.

3. THE PREPARATION OF PERCHLORIC ACID.

J. Am. Chem. Soc. 34, 1480-1485 (Nov. 1912).

OTHER
PUBLICATIONS

(Appendix to) QUALITATIVE CHEMICAL ANALYSIS, by A. B. Prescott and O. C. Johnson.)
Sixth Edition. Revised. D. van Nostrand Co., 1908, pp. 8.

(Review of) PER-ACIDS AND THEIR SALTS, by T. Slater Price, London: Longmans, Green & Co., 1912.

J. Am. Chem. Soc. 36, 1323 (June 1914).

Theodore J. Wrampelmeier

1881—1886

ORIGINAL
CONTRIBUTIONS

1. A STUDY OF THE U. S. PHARMACOPOEIAL METHOD OF ASSAYING OPIUM. (With G. Meinert.)
Proc. Mich. State Pharm. Assoc. 4, 127-132 (1886).
Pharm. Record 6, 411-412 (Dec. 1886).
Am. Druggist 15, 203-204 (Nov. 1886).
2. OLEATE OF ZINC: ITS PROPERTIES AND PREPARATION.
Proc. Mich. State Pharm. Assoc. 3, 134-136 (1885).
3. THE CHARACTER OF THE SO-CALLED OLEATE OF ARSENIC.
Proc. Mich. State Pharm. Assoc. 3, 137-139 (1885).
Pharm. Record 5, 399 (Dec 1885).

OTHER
PUBLICATIONS

(In collaboration with A. B. Prescott.)

REPORT ON THE PUBLIC WATER SUPPLY OF DETROIT.

Annual Report, Board of Health of Detroit, 1882, p. 231.

ON THE DILUTION AND MIXTURE OF ACIDS, ALCOHOL, SOLUTIONS OF SALTS, ETC.

New Remedies 12, 1-2 (Jan. 1883).

Karl W. Zimmerschied

1905—1911

ORIGINAL
CONTRIBUTIONS

OTHER
PUBLICATIONS

1. A NEW APPARATUS FOR POL-
ISHING METAL SECTIONS.
J. Am. Chem. Soc. 29, 855-
858 (June 1907).

INDEX

	PAGE
Analytical Chemistry	13
Anderegg, L. T.	22
Badger, W. L.	22, 27
Balcom, R. W.	21
Bartell, F. E.	22, 28
Bibliography:	
System of Classification	23-25
1856-1916	27-163
Bigelow, S. L.	21, 29-32
Blome, W. H.	21, 33
Browne, D. H.	20, 34
Campbell, A.	21, 34
Campbell, E. D.	20, 35-43
Carney, R. J.	22, 44
Cheever, B. W.	20, 45
Chemical Engineering	15
Clover, A. M.	21, 46
Cole, H. N.	22, 47
Cone, L. H.	21, 48-50
Davol, D. L.	21
Douglas, Samuel T.	19, 51
Douglas, Silas H.	7, 8, 14, 16, 19, 52-53
DuBois, A.	19
Dunlap, F. L.	21, 54-55
Edwards, W. F.	20, 56
Faculties, Members of, (1856-1916).....	19-22
Ferguson, A. L.	22, 57
Freer, P. C.	15, 17, 20, 58-64
General Chemistry	14
Glover, C. C.	22
Gomberg, M.	3, 20, 65-73
Grunwald, B.	22
Hale, W. J.	3, 21, 74-78
Harris, J. E.	22, 79
Higley, G. O.	20, 80-81
Houghton, Douglas	7
Hubbard, W. S.	22, 82

Hulett, G. A.	21, 83-85
Hygiene	13
Johnson, O. C.	14, 19, 86-87
Joy, D. A.	20
Laboratory :	
First	8
Enlargements to First	9
New	10
Lachman, A.	21, 88
Laird, J. S.	22, 89
Langley, J. W.	19, 90
Lichty, D. M.	20, 91-92
Lind, S. C.	21, 93-95
McAlpine, R. K.	22
McGee, C. E.	20, 96
Meloche, C. C.	22, 97
Novy, F. G.	20, 98-100
Organic Chemistry	15
Pharmacy	12
Physical Chemistry	14
Physiological Chemistry	13
Prescott, A. B.	12, 14, 16, 19, 101-124
Registration :	
1908-1909	10
1915-1916	11
Rose, P. B.	19, 125
Rue, J. D.	22, 126
Schlotterbeck, J. O.	20, 127-132
Shannon, F. L.	22
Sherman F. L.	21, 133
Smeaton, W. G.	21, 134-135
Smith, F. C.	20, 136
Stevens, A. B.	3, 20, 137-142
Sullivan, E. C.	21, 143
Tappan, Pres. H. P.	8
Tolman, R. C.	22, 144
Trowbridge, P. F.	21, 145
Vaughan, V. C.	19, 146-152
Ware, E. E.	22, 153
White, A. E.	22, 154
White, A. H.	21, 155-160
Whyte, G. W.	20
Willard, H. H.	21, 161
Wrampelmeier, T. J.	20, 162
Zimmerschied, K. W.	21, 163

540.72 M6 C3

540.72

M6



a39001



006992823b

91918

